

Long Island National Wildlife Refuges  
Shirley, New York

ANNUAL NARRATIVE REPORT  
Calendar Year 1987

U.S. Department of the Interior  
Fish and Wildlife Service  
NATIONAL WILDLIFE REFUGE SYSTEM





REVIEW AND APPROVALS

WERTHEIM NATIONAL WILDLIFE REFUGE

Shirley, New York

ANNUAL NARRATIVE REPORT

Calendar Year 1987

Ray Whittemore  
Refuge Manager

3/1/88  
Date

Edward S. Moses  
Refuge Supervisor

4/7/88  
Date

Donald J. Young  
Regional Office Approval

4/8/88  
Date



The 1987 Long Island National Wildlife Refuge Complex Annual Narrative is dedicated to:



Russel Murdock

Former caretaker of the Wertheim Estate (now Wertheim NWR) for 35 years prior to Fish and Wildlife Service ownership.



WERTHEIM NATIONAL WILDLIFE REFUGE

Shirley, New York

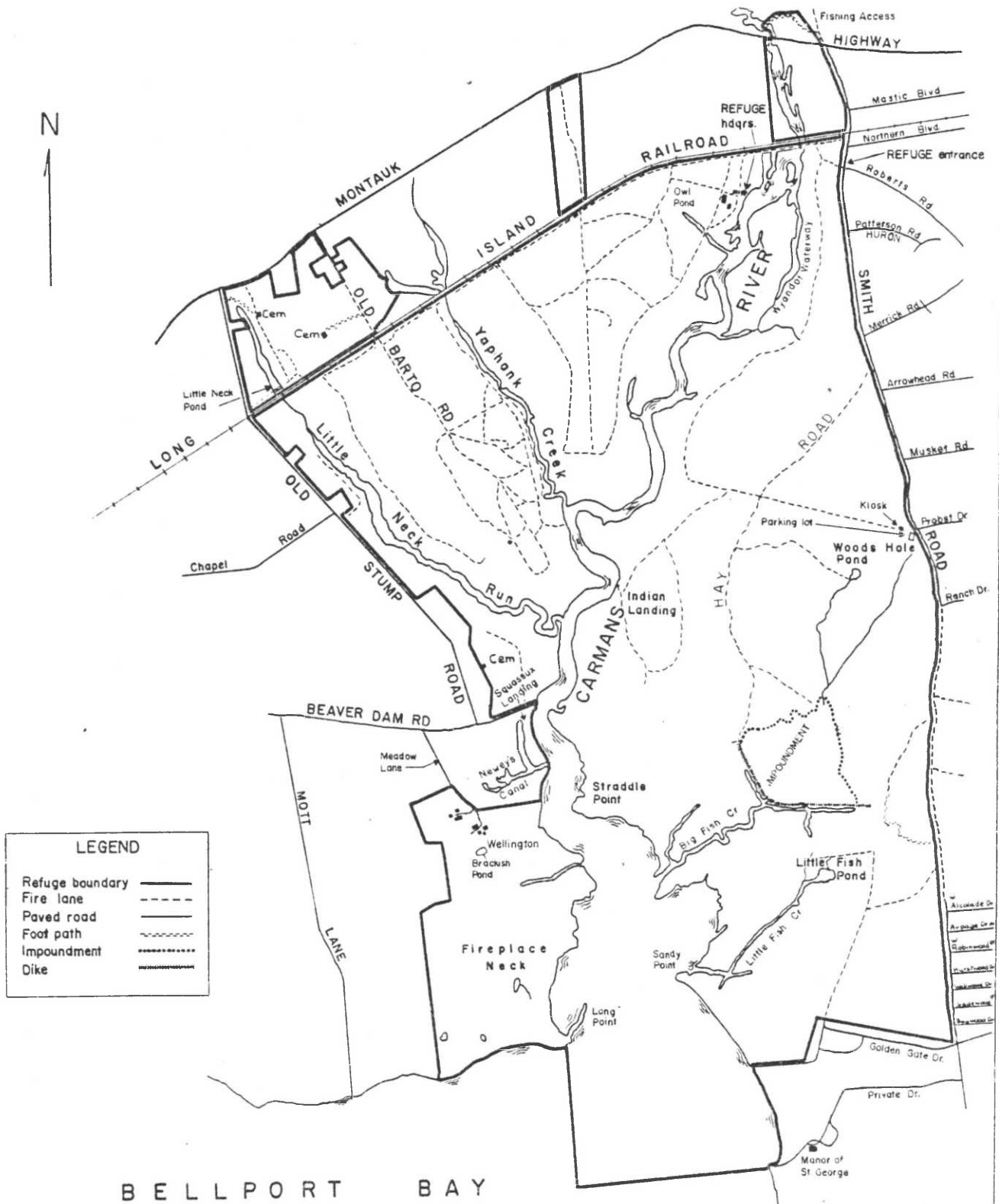
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NATIONAL WILDLIFE REFUGE SYSTEM



WERTHEIM NATIONAL WILDLIFE REFUGE



Mark Jones Bio Tech 1986



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## INTRODUCTION

The 2,400 acre Wertheim National Wildlife Refuge is located on the south shore of Long Island, New York. Of the total acreage, approximately 45 percent is oak-conifer forest, 20 percent open water ponds, rivers and bays and 35 percent salt, brackish and freshwater marshes. The refuge is bisected by the Carmans River which enters from the north, meanders through the refuge and empties into Bellport Bay. Yaphank Creek, Little Neck Run, Big Fish Creek and Little Fish Creek join the Carmans River within the refuge. Wertheim protects one of the last undeveloped estuaries on Long Island. The topography is flat and soils are sandy.

The Carmans River is one of the last areas to freeze in the winter and attracts wintering black ducks in great numbers. The refuge originated as a donation from Cecile and Maurice Wertheim who maintained the area as a private reserve for duck hunting. The headquarters for the Long Island Refuge Complex is located here. Refuges managed from Wertheim include: Morton, Amagansett, Conscience Point, Seatuck, Target Rock, Oyster Bay and Lido Beach WMA.



Arial view of the Carmans River and Wertheim Refuge looking south towards the Atlantic Ocean. (Wrt-84, Sanford)



### A. HIGHLIGHTS

The Long Island Refuge Complex headquarters office at Wertheim underwent interior renovation (section I-2).

The main dike for the Big Fish Creek impoundment was extended and rehabilitated, and construction on a sub-impoundment dike was begun (section F-2).

One half of the phragmites-choked Big Fish Creek impoundment was successfully prescribed burned creating improved nesting, migratory and wintering waterfowl habitat and facilitating effective, multi-year water management (section F-9).

Personal property items remaining from the Eberstadt estate at Target Rock Refuge were auctioned off by the General Services Administration (section D-4, Target Rock Narrative).

The Wellington dormitory received many interior, as well as exterior, building improvements (section I-2).

### B. CLIMATIC CONDITIONS

No weather records are kept at the refuge, however precipitation data is obtained from the Brookhaven National Laboratory, which is located approximately four miles north of the refuge. Total precipitation for the year was 40.8 inches, compared to 43.73 inches in 1986 and 44.12 inches in 1985. Average annual precipitation is 43.4 inches.

### C. LAND ACQUISITION

#### 3. Other

Numerous efforts were made during the year by refuge staff to generate support for acquisition of the Robinson's Duck Farm (Southampton Farm Associates) and Brookhaven Associates tracts, both of which border the northern boundary of Wertheim Refuge and provide valuable wildlife habitat. On separate occasions, managers Spaulding and Jasikoff met with county and town elected officials to express the desire of the Service of preserve these areas. Both areas were recommended by the Suffolk County Planning Board for acquisition under provisions of the recently passed New York State Environmental Quality Bond Act. By year's end, Managers Whittemore and Jasikoff were in contact with



representatives from the non-profit organization known as Trust for Public Lands, who were beginning to negotiate with the owners of the Robinson's Duck Farm property, with the ultimate goal of the Fish and Wildlife Service purchasing the area and adding it to the refuge. The owners are in the process of getting the area approved for development, so the time factor involved with negotiating an option may prove to be critical in determining the fate of this land.

The addition of this property would add valuable upland and riparian habitat and increase our capabilities to manage for waterfowl production through grassland management.

#### D. PLANNING

##### 2. Management Plans

Action was taken on three management plans during the year. Drafts were completed for the wildlife inventory and public use plans for all of the Long Island refuges. The fire management plan was updated and approved.

##### 4. Compliance with Environmental and Cultural Resource Mandates.

Region 5 Archeologist John Wilson visited Wertheim on May 18, 19 and 20 to determine if the borrow pit which was to be used to provide fill for the extension and rehabilitation of the Big Fish Creek Dike project scheduled for completion this summer, contained any artifacts of archeological significance or antiquities indicating past cultural or historic activity. ORP Bell assisted Wilson with his work by establishing a sampling grid and sifting soil in and around the borrow pit. Nothing of significance was discovered and construction activity commenced shortly afterwards.





Regional Archeologist John Wilson searching for artifacts of archeological significance at Wertheim NWR. (Wrt-87, Bell)

On May 20, R.O. Archeologist John Wilson and ORP Bell discovered recent excavations in the Hawkins family cemetery on Wertheim NWR adjacent to Old Stump Road and Montauk Highway. Two holes were dug adjacent to illegible headstones; one hole was approximately three feet deep, two feet wide and eight feet long and the other was about one half as large. Acting Refuge Manager Jasikoff responded by requesting assistance from Suffolk County Police Department and the Lawrence, NY, law enforcement office. Some of the gravestones dated back to the late 1800's and consideration was given to possible Archeological Resource Protection Act (ARPA) violation. The refuge had been contacted by the County Sheriff earlier in the month regarding a report by a neighboring landowner of activity in the cemetery. Suffolk County P.D. and Special Agent John Meehan both responded to our request for assistance. On May 21, bones were found from an animal about the size of a dog in the recently excavated material. These bones were picked up by the Suffolk County medical examiners office to determine if they were human bones from a small child. The M.E.'s office confirmed the bones were not human. The holes were filled in and the cemetery carefully monitored over the following months.



A request was made to extend the expiration date for the New York State Department of Environmental Conservation wetland permit allowing construction of the sub-impoundment dike. The original expiration date was December 31, 1987. An extension is needed since the construction of the sub-impoundment is incomplete.

Two open burning permits were issued by New York State Department of Environmental Conservation for the prescribed burns at Wertheim in the spring and fall.

#### 5. Research and Investigations

Wertheim NR87 "The Distribution and Marine Adaptations of the Snapping Turtle (*Chelydra serpentina*), In A Long Island Estuary.

This three year study was initiated at Wertheim in 1987 by Ph.D. candidate Joseph Kinneary of Rutgers University. The graduate research concerns the evolution of marine adaptations in turtles, particularly snapping turtles, and their distribution in the Carmans River with reference to salinity. Field work consisted primarily of a systematic mark-recapture program, with the objective of obtaining enough population data to determine if various sub-populations of turtles are segregated according to a salinity gradient. Eighty one snapping turtles and twenty-one painted turtles were collected primarily through the use of hoop net traps set out at 30 sites along the Carmans River and its tributaries. Twenty three clutches of snapping turtle eggs (ranging in size from 11-40 eggs) were also collected and incubated in the lab so that experiments concerning physiological adaptations to saline water could be carried out. Results thus far have been inconclusive, but additional field sampling is scheduled for at least one more year.





Graduate researcher Joe Kinneary setting out hoop net in the Carmans River (Wrt-87, Meyer)

#### **E. ADMINISTRATION**

##### **1. Personnel**

The following was the staff roster for 1987:

1. Roger A. Spaulding, Refuge Manager GS-12, PFT EOD 7/27/80 detailed to Central Office on 120-day appointment 4/4/87; officially transferred to C.O., Washington, D.C., 7/10/87.
2. Raymond E. Whittemore, Refuge Manager GS-12, PFT, EOD 11/22/87.
3. Thomas M. Jasikoff, Assistant Manager, GS-11, PFT EOD 7/8/85. Temporarily promoted to Acting Project Leader GS-12, from 05/24/87 to 09/20/87.
4. James P. Glynn, Assistant Manager, GS-7, PFT EOD 8/5/85, transferred to Carribean Islands NWR Complex 2/15/87.
5. Paul F. Casey, Assistant Manager, GS-7, PFT, EOD 2/2/86.



6. James W. Bell, Outdoor Recreation Planner, GS-9, PFT, EOD 5/28/85.
7. Jane N. Striebel, Secretary, GS-5, PFT, EOD 9/29/86.
8. Bruce Marto, Maintenance Worker, WG-8, PFT, EOD 4/4/71.
9. Andrew J. Rokus, Maintenance Worker, WG-8, PFT, EOD 11/12/85.
10. Donald A. Lima, Laborer, WG-2, TFT, EOD 08//23/87.
11. Scott M. Runkel, Laborer, WG-2, TFT, EOD 06/07/87, terminated 1/2/87.
12. Mark F. Jones, Biological Technician, GS-5, TFT, EOD 11/12/85, terminated 01/02/87.



Ray Whittemore





Tom Jasikoff



Paul Casey





Jim Bell



Jane Striebel





Andy Rokus





Bruce Marto



Don Lima



A major personnel change occurred during the year by the replacement of Refuge Manager Roger Spaulding, who had been project leader for seven years, with Ray Whittemore. Spaulding was transferred to Washington, D.C., to serve as uniform coordinator for the Service. Prior to his arrival, Whittemore served as primary assistant manager at Iroquois NWR. Tom Jasikoff served as acting refuge manager for the seven month period from when Spaulding departed and Whittemore arrived.

Assistant Manager Jim Glynn also transferred during the year. Requests by the refuge to refill Jim's position were denied by the Regional Office.

The following chart reflects the recent staffing history of the Long Island Refuge Complex:

<u>Fiscal Year</u>	<u>PFT</u>	<u>PPT</u>	<u>Temp</u>	<u>Program</u>	<u>SCA</u>
FY-88	7		2	0	6
FY-87	8		3	7	6
FY-86	7		3	10	6
FY-85	6		2	10	6
FY-84	6		3	11	3

## 2. Youth Programs

A youth Conservation Corps (YCC) program was not funded for Wertheim in 1987.

## 3. Other Manpower

For the second year in a row, the refuge participated in a county sponsored program to allow non-violent offenders to perform community service work in-lieu-of jail time. Assistant Manager Jasikoff serves as the refuge program coordinator supervising participants on a daily basis. During the year, seven community service participants cumulatively logged 1,000 hours at Wertheim NWR. Additionally, a community service adult work crew and parole officer worked Saturdays, contributing approximately 1,600 hours of labor. The work time logged in by Suffolk County Community Service participants on the refuge is roughly equivalent to 1.5 FTE's. The benefits and accomplishments of the program have been significant. The work performed has included vehicle maintenance, carpentry, landscaping, trash pickup, interior renovation of the Wellington dormitory and Wertheim office, fire trail maintenance and habitat improvement.

Six Student Conservation Association (SCA) enrollees served as staff members from mid-March through mid-September. Each



enrollee was on board for 12 weeks during which they accomplished such duties as tern warden, tour guide, monitoring mosquito larval production, waterfowl brood surveys, sampling water chemistry and fire detection/prevention patrol. They also assisted with day to day maintenance activities. This program has been very valuable to the refuge due to the quality of personnel and relative low costs. Each enrollee cost the refuge approximately \$1,350. The refuge provides free housing for each student during their tenure. Most enrollees are college educated with major degrees or courses of study in natural resource management. Three enrollees were stationed at Wertheim NWR, two at Morton NWR, and one at Target Rock NWR.

#### SCA Volunteers - 1987

1. Glen Klingler (Wertheim) 3/23/87 - 6/12/87
2. Don Lima (Morton) 3/30/87 - 6/19/87
3. Spencer Simon (Wertheim) 5/25/87 - 8/15/87
4. Suzanne Unangst (Morton) 6/15/87 - 9/4/87
5. Lois Henry (Target Rock) 5/17/87 - 8/7/87
6. Paul Rebeiz (Wertheim) 6/27/87 - 9/16/87

#### 4. Volunteer Program

Six volunteers assisting with various projects donated approximately 151 hours to Wertheim NWR during the year. Certificates of Appreciation were sent out to four volunteers, (in one case a group) in recognition of the outstanding efforts they made during 1987. Dave McCutcheon, James Daniels, Julius and Cecilia Hastings and the Friends of Wertheim, all received certificates signed. Thank you letters were also sent to eight other volunteers who had helped with maintenance and wildlife management activities during 1987.

To commemorate Federal Lands Day on September 12, two volunteers gave guided walks at Wertheim encompassing the Indian Landing Nature Trail and the Big Fish Creek impoundment. Each walk lasted approximately two hours.

Five members of the Friends of Wertheim, a volunteer organization, donated a total of 16 hours and conducted a river cleanup at Wertheim in April to commemorate the Take Pride in American workfest, 1987. Canoes were donated by the Carmans River Canoe Company and over 90 gallons of trash was removed.

#### 5. Funding

The following chart depicts the funding status for the Long Island Refuge Complex during the last five years:



FIVE YEAR FUNDING HISTORY  
(Thousands \$)

	1210	1220	1240	1260	1520	1994	8610	TOTALS
FY-83								
O&M	184	5	31	0	0	7	0	
CYC	20	0	0	0	0	0	0	167
Maint								
FY-84								
O&M	0	0	200	0	17.5	6	0	223.5
FY-85								
O&M	0	0	0	232	21.3	9.6	0	262.9
FY-86								
O&M	0	0	0	339.2	21	0	14.7	374.9
FY-87	0	0	0	277.7	0	0	22.9	300.6

Funds to complete the Wertheim office interior renovation, water line installation and installation of a water purification system, were realized through the use of salary savings resulting from the transfer of Managers Spaulding and Glynn.

#### 6. Safety

Maintenance Worker Marto was out of work for six weeks in early spring as a result of a back injury he sustained while re-securing a broken window at Target Rock Refuge on 3/14/87. Mr. Marto sustained another back sprain on 12/14/87 by slipping on ice, resulting in time off the first week of 1988. Mr. Marto was also the victim of a tick bite which caused Rock Mountain spotted fever during the year. Fortunately, Mr. Marto identified the early warning symptoms and received treatment before serious medical complications ensued.

During the year Assistant Manager Casey served as safety officer. Safety meetings were held intermittently throughout the year.

Many safety hazards were corrected throughout the year as part of on-going efforts to upgrade the refuge buildings and quarters. For example, ground fault interrupter electrical outlets were installed in several of the refuge quarters and the electrical system in the refuge headquarters office was completely overhauled.



The staff completed a nine hour Defensive Driving Course in May. The course, conducted by the Suffolk County National Safety Council, consisted of defensive driving techniques for both personal and emergency vehicles.

#### 8. Other

Revenue sharing checks were delivered to six town offices on Long Island by Managers Spaulding and Jasikoff during April, as follows:

Town of Brookhaven (Wertheim NWR)	\$38,228
Town of Oyster Bay (Oyster Bay NWR)	1,443
Town of Islip (Seatuck NWR)	5,501
Inc. Village of Lloyd Harbor (Target Rock NWR)	10,801
Town of East Hampton (Amagansett NWR)	4,361
Town of South Hampton (Morton NWR & Conscience Point NWR)	<u>25,074</u>
Total	\$88,418

The staff attended a seminar on the new and old retirement plans (FERS and CSRS) in April, sponsored by OPM. The seminar was held at the Fire Island National Seashore office.

Assistant Manager Casey and SCA Klingler traveled to the Eastern Shore of Virginia NWR on May 12-14 to pick up excess and screened materials. The refuge van and a trailer were filled to capacity with tables, beds, dressers and chairs to furnish the Wellington dormitory and the Target Rock apartment. Plexiglass, ceiling and floor tile, plumbing supplies and much more were brought back for renovations and maintenance of refuge quarters and buildings. An excessed washer and drier were added to the list in December.

An agreement was negotiated in August between the refuge and the Town of Brookhaven's Department of Waste Management to allow illegally dumped trash/refuse that had been deposited adjacent to the refuge boundary, and subsequently picked up by refuge staff, to be dumped at the Town's landfill at no cost.

As part of the interior renovation of the headquarters office at Wertheim, all refuge files and maps were reorganized and purged. This tedious, time consuming project was sorely needed.

On three separate occasions, Bart Hays and Sue Oliviera, R.O. appraisers, visited the Long Island refuges to review and update land values for revenue sharing purposes.



On June 22, Managers Jasikoff and Casey met with local building developers Tony Coraci and Joe Asoro of Woodland Estates Properties to discuss erection of gates along the unpaved portion of Smith Road. Mr. Coraci donated his portion of Smith path to the refuge. We agreed to have the refuge erect a pipe gate at the south end of the unpaved portion of Smith Road if Mr. Coraci would provide a natural barrier of evergreen trees adjacent to the gate and contact Brookhaven town authorities concerning their property at the north end of the unpaved portion of Smith Road. The refuge is cooperating with Mr. Coraci and town officials in an attempt to reduce littering, vandalism and illegal trespass on the unpaved portion of Smith Road (Smith Path).

The Long Island Lighting Company (LILCO) cleared trees and brush along their power line right-of-way in June, which runs alongside the Long Island Rail Road and bisects Wertheim refuge.

Refuge Supervisor George Gavutis visited the Long Island Refuge Complex on July 14 and 15 and inspected the road work completed at Wertheim refuge in preparation for the Big Fish Creek dike extension and rehabilitation.

Managers Jasikoff and Casey visited County Legislator Ed Romaine's office and Kahlers Pond, in East Moriches, on October 7, in response to a request by Mr. Romaine concerning use and alleged pollution of the pond by Canada geese. Assistant Manager Casey attended a meeting concerning this issue and provided attendees with wildlife assistance information and material.

Managers Whittemore and Jasikoff visited all eight Long Island refuges during December, which served as a general orientation for the new manager. Intermixed with the refuge tours were introductory visits with local individuals having varying interests in the Long Island refuges.

Assistant Manager Casey was presented a Special Achievement Award by Acting Project Leader Jasikoff in August. Paul Received the well deserved award for his voluntary efforts to renovate large portions of the Wellington dormitory.

#### F. HABITAT MANAGEMENT

##### 2. Wetlands

After years of planning and frustrated efforts at obtaining all the necessary permits, rehabilitation and extension of the Big Fish Creek Dike was finally completed. Construction of the sub-impoundment dike was begun and will, in all



likelihood, be completed in FY-88 by force account. The contract was issued to a local construction firm known as Laser Industries for \$72,040. Rehabilitation and extension work was begun in August and completed by September. Approximately one and one-half feet of borrow material was placed along the length of the proposed sub-impoundment dike by the end of the year. The sub-impoundment dike is still approximately two feet below the finished grade and the contractor has completed required hauling of fill according to contract terms. Peter Elliott, R.O. Engineering, who has served as project engineer, visited the refuge on November 16 and met with Acting Project Leader Tom Jasikoff to inspect the field work and discuss alternatives for project completion. The completed dike work will facilitate the implementation of an effective and beneficial marsh management plan and allow easy access by refuge staff from one side of the impoundment to the other. Prior to the completion of the Big Fish Creek dike, access for law enforcement, fire fighting, and wildlife censusing was limited and fragmented.



A view of the salt marsh at Wertheim Refuge looking south from the Big Fish Creek Dike (Wrt-87, Jasikoff).





Contractors completed rehabilitation and extension of the Big Fish Creek Dike during 1987 (Wrt-87, Jasikoff).



A culvert is positioned on the newly constructed sub-impoundment dike by Maintenance Worker Rokus.  
(Wrt-87, Jasikoff)





A view of the partially completed sub-impoundment dike  
(Wrt-87, Jasikoff)

Assistant Manager Casey and Laborer Lima designed and constructed a flap-gate for the water control structure at the Big Fish Creek impoundment. The flap-gate worked well in allowing fresh water to drain out of the impoundment at low tide and preventing salt water from entering the impoundment during high tide.

### 3. Forests

Four special use permits for firewood cutting were issued during the year. A total of four cords of wood were removed. The purpose of issuing wood cutting permits is to clear downed timber alongside refuge fire roads and trails to create better and safer access. An interim forest management plan was written last year but has not been implemented as of yet.

### 5. Grasslands

There are approximately 85 acres of old field habitat on the refuge. These areas are located on the west side of the Carmans River and range in size from one to 20 acres. Approximately ten acres were mowed in a field adjacent to Montauk Highway and Old Stump Road in January. More mowing needs to be done and an attempt will be made in the coming year to accomplish it, as time and resources allow.

### 9. Fire Management

a. **Wildfire:** Wertheim has a history of wildfires going back many years. It is a problem which plagues all public lands on Long Island as well undeveloped areas in general. We have been successful in bringing this problem under control in recent years through a combination of actions. In



the past, there have been as many as 25 wildfires on the refuge. There were only three in 1987 as outlined below:

#### Wildfire Occurrence in 1987

Date	Location	# Acres	Probable Cause	Extinguished By
4/21/87	Adjacent to Indian Landing Nature Trail	1.0	Illegal campfire	B'haven FD
5/9/87	Woodlands adjacent to S. portion of Smith Road	0.5	Neighborhood children in underground fort	Refuge Staff B'haven FD
6/18/87	Woodland adjacent to Smith Road	0.5	Cigarette	B'haven FD

The most effective deterrent against wildfires has been the use of Student Conservation Association volunteers on fire prevention patrols. An SCA starts the 12-week tour just before the beginning of our fire season and assists with maintenance and preparation of equipment. They work a regular 40-hour week which includes weekends and evening hours as the days get longer. While on duty, they patrol the refuge in a government vehicle which serves as a deterrent to trespassing. Most of our wildfires are caused by campfires or deliberate sets. The mere presence of a refuge official has resulted in a significant decline in wildfires. The patrols are continued throughout the summer months and into September.

The stabilized strength of our full-time staff has also been an asset to our fire management program. Assistant Manager Casey received fire management training at Wallops Island in February, bringing our firefighting strength up to five. We are now able to field an effective initial attack force and as such our relationship with the local volunteer fire department has improved, as we now have the capability to control most of our own fires without assistance.

b. Prescribed fire: Scheduled springtime prescribed burning of woodland parcels was not accomplished due to unacceptable weather and environmental conditions.

On November 5, one-half of the phragmites-choked Big Fish Creek impoundment was prescribed burned, resulting in the



removal of approximately 25 acres of phragmites. The burn was a real success and represents the first refuge attempt at actually managing the impoundment. The purpose of the burn was to remove the standing crop of phragmites to fulfill two major objectives; 1) to promote immediate and short-term benefits to waterfowl and other wildlife by opening-up the marsh and creating open water areas, and 2) to facilitate long-term control of phragmites by exposing root crowns and making the plant susceptible to stress after flooding. Also, the stoplogs in the water control structure were removed prior to the burn and replaced following the burn allowing it to reflood. With adequate precipitation, water levels in the impoundment should rise enough to inundate the burnt phragmites stalks and root crowns and thus improve habitat conditions for overwintering waterfowl, and stress, if not kill, individual plants. Plans are to continue the prescribed burning of phragmites in combination with other management techniques (i.e., herbicides, mowing, etc.), with the ultimate goal of eliminating it from our fresh and saltwater marshes.



Refuge and National Park Service staff conducted a test burn of the phragmites prior to ignition (Wrt-87, Jasikoff)





Approximately 25 acres of phragmites was burned successfully  
in the Big Fish Creek impoundment during 1987  
(Wrt-87, Jasikoff)



Assistant Refuge Manager Casey stands watch over the  
phragmites as it is back burned for the first time  
on the refuge. (Wrt-87, Jasikoff)





A view of the phragmites-choked impoundment before  
prescribed burning. (Wrt-87, Jasikoff)



A view of the phragmites-choked impoundment after  
prescribed burning. (Wrt-87, Jasikoff)





A view of the impoundment after burning and reflooding.  
(Wrt-87, Jasikoff)

#### 10. Pest Control

Suffolk County Vector Control was issued a permit to apply Bacillus thuringiensis Berliner var. israelensis (BTI) by helicopter for mosquito control. BTI was applied every Wednesday throughout the summer. Manager Jasikoff and SCA Simon met with Dr. Guirus of the Suffolk County Vector Control in May to review weekly procedures for sampling, analyzing and reporting the abundance of mosquito larvae in Wertheim's salt marsh. This is the fourth year in which refuge staff have taken weekly mosquito larvae samples along three 100 meter long transects in strategically located areas of the marsh.

Concern about Lyme disease continued among the staff and proper precautions were taken to prevent tick bites. No new cases of Lyme disease were reported at Wertheim during the year. Four acres at Wertheim were treated with the tick toxicant Damminix, in an effort to control ticks that may carry the bacterium that cause Lyme disease. Damminix consists of chemically treated mouse nesting material contained within dispensing tubes. Approximately 50 tubes per acre are placed in areas where white-footed mice (Peromyscus leucopus), ticks and humans are likely to interact. When applied properly, tick-infested mice locate the nesting material contained within the dispensing tube and take it to their nests. Once incorporated into their nest, the insecticide continues to work, killing the ticks associated with these mice and the transmission of Lyme



the insecticide continues to work, killing the ticks associated with these mice and the transmission of Lyme disease. The tick-control scheme was developed by researchers at the Harvard School of Public Health, who proved that wild mice serve as a reservoir for the bacterium that causes Lyme disease and are part of the 2-year cycle of the deer tick (Ixodes dammini). Two acres at Morton NWR and one acre at Target Rock NWR were also treated with the toxicant. Seatuck refuge did not receive an application due to conflicts with current research.

No additional effort was made by refuge staff to negotiate with New York State Department of Environmental Conservation concerning permits for application of the herbicide Rodeo @. A state-wide approach was being coordinated by the R.O.

## G. WILDLIFE

### 1. Wildlife Diversity

Despite the close proximity to New York City and suburban environs, Wertheim NWR offers protected habitat for a variety of wildlife.

The refuge is characterized by an open canopy of mixed upland forest, grassland, freshwater marsh, salt marsh and forested wetlands which supports wildlife representative of these varying communities. Of particular importance, the refuge serves as a sanctuary for many species of wintering waterfowl, as the tidal river is the last area to freeze up providing suitable open water and feeding habitat.

### 2. Endangered and/or Threatened Species

An immature bald eagle was observed flying over the Carmans River in September by Assistant Manager Jasikoff and Laborer Lima.

Three pair of osprey, a species listed as threatened by New York State Department of Environmental Conservation, attempted to nest at Wertheim during 1987. One pair successfully nested in the osprey platform located at the Wellington tract fledging three young in July.

SCA Klingler found a new osprey nest just north of the refuge boundary in the Yaphank Creek headwaters area. The discovery was reported to the Town of Brookhaven Division of Environmental Protection since the area was being considered for development. Unfortunately, the nesting attempt was unsuccessful.



were fledged. Two least terns were observed along the Carmans River at 5/27/87. These birds probably attempted to nest on the barrier beach of Fire Island.

### 3. Waterfowl

Thirty wood duck boxes with aluminum conical predator guards were in place for the 1987 nesting season. During November and December, all boxes were serviced and checked for productivity. Based upon the total eggshell membranes counted 53 ducklings were produced using 13 of the available boxes. Several boxes were also used by grey squirrels, tree swallows and screech owls. As illustrated in the table below, wood duck production from nest boxes and Wertheim has increased dramatically since the reorganizing and refurbishing of the wood duck nest box program was completed in the spring of 1986.

Number of wood ducks produced at Wertheim NWR (from nest boxes) from 1982 to 1987.

<u>Year</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
Number of ducklings produced	5	2	15	12	71	53

As has historically been the case, the Carmans River remained relatively free of ice during the winter months of 1987, thereby providing an attractive wintering area for a variety of waterfowl. Common waterfowl species overwintering at Wertheim include the mallard, black duck, bufflehead and scaup. Occasional winter sightings are also made of canvasbacks, gadwall, American widgeon, northern shoveler and common merganser. Approximately 150 snow geese were observed using the Wertheim salt marshes during the last two weeks of November. Snow geese are an uncommon migrant on Long Island.





Wertheim Refuge serves as a major wintering area for black ducks, as the Carmans River provides relatively ice free water during the winter. (Wrt-85, files)

#### 5. Shorebirds, Gulls, Terns and Allied Species

Following the drawdown of the Big Fish Creek impoundment in August, blocks of glossy ibises, snipes, sanderlings, least sandpipers and killdeer were observed feeding on the mud flats. Hundreds of herring gulls and greater black-backed gulls are present daily on the river and the bay during the fall and winter months.

#### 6. Raptors

The American kestrel, red-tailed hawk and screech owl were known to nest on the refuge during the year. Species suspected of nesting on the refuge include the northern harrier, sharp-shinned hawk, short-eared owl, and great horned owl.

Wertheim NWR serves as a coastal stopover during migration and provides consistent opportunities to observe migratory raptors. Species observed during this year's fall migration included merlins, Cooper's hawks, sharp-shinned hawks, red-shouldered hawks, broad-winged hawks and osprey.



## 7. Other Migratory Birds

The coastal wooded areas of Wertheim NWR serve as important migrational habitat for neotropical migrant passerines. this year, as always, waves of warblers, kinglets, vireos and flycatchers passed through the refuge. Noteworthy observations included the yellow breasted chat and worm-eating warbler.

A total of ten mist nets were purchased in September for the purpose of sampling and documenting avian use of the refuge. The nets were set up behind the Wellington dormitory and along the fire trail behind Q-1. The effort proved to be successful as well as a valuable learning exercise for SCA volunteers. Mist netted birds were not banded and were released immediately following identification and documentation. Mist netted birds included yellow-throat, white-eyed vireo, American robin, downy woodpecker, veery, blue-winged warbler, least flycatcher and catbird.

Several pair of eastern bluebirds were observed inspecting natural cavities on the refuge in May and by June. Refuge staff had succeeded in getting a territorial response from a few by broadcasting pre-recorded bluebird vocalizations. This preliminary field work paid off when Assistant Manager Jasikoff confirmed bluebird nesting for the first time on the refuge. The discovery represents one of three documented successful nesting attempts of bluebirds on Long Island in many years. The recent bluebird activity of Wertheim Refuge is likely the result of increased snag availability and habitat suitability caused by extensive hardwood die-offs in the early 1980's from successive gypsy moth defoliations. Re-establishment of a bluebird breeding population at Wertheim could be a great public relations benefit and could serve as a breeding population nucleus by which a nesting box program could be extended into surrounding neighborhoods with suitable habitat. The bluebird is New York's state bird and there is intense interest and support by the public for their re-establishment.

Assistant Manager Jasikoff and Laborer Lima participated in the Christmas bird count on 12/27/87 at Wertheim Refuge. Noteworthy observations included golden-crowned kinglet, eastern bluebird, red-bellied woodpecker and Cooper's hawk.

## 8. Game Mammals

A deer track count was conducted at Wertheim Refuge on 1/20/87 to help determine population trends and the number of deer on the refuge. A total of 11 separate deer tracks were counted. Deer sightings have steadily increased over the past several years.



Several observations have been made of deer crossing Smith Road, with one mortality occurring as a result of a car/deer collision. Population estimates for the refuge range from 20-40 deer.

#### 11. Fishery Resources

Thousands of fingerling-sized brown trout were stocked in the Carmans River, by New York DEC, in the spring as part of an ongoing effort to establish an anadromous fishery. Success of the program will be determined in future years.

#### 12. Wildlife Propagation and Stocking

Refuge staff initiated a fiddler crab reintroduction project at Wertheim refuge in July of 1986 by capturing over '6,000 crabs at Morton refuge and dispensing them among ten selected intertidal sites of the Carmans River estuary and salt marsh. The fiddler crab population at Wertheim was decimated in the early 1950's when DDT was used in the salt marsh for mosquito control. The purpose of the reintroductions are to restore the fiddler crab population in the marsh since it is an important component in the local estuarine food chain. The reintroduction of the fiddler mud crab to Wertheim NWR continued this year. SCA volunteer Spencer Simon coordinated the collection of the crabs from Morton NWR and the reintroduction into prepared sites at Wertheim. This year 1,082 males and 1,048 females were transplanted. Follow-up investigations of the 1987 release sites showed fiddler crab use at three sites and none at the fourth site. Only one of the ten release sites used in 1986 showed signs of use in 1987. A field evaluation will be conducted to determine success of the reintroduction program to date, before additional releases are made.

#### 16. Marking and Banding

The post season banding quota of 100 black ducks was reached in February after experiencing more difficulty than in previous years. Ice and snow caused the necessity of an extended trapping effort.

Refuge Managers Spaulding, Jasikoff and Casey assisted state wildlife biologists with a large banding round-up on February 19. The round-up took place on private property adjacent to Conscience Point NWR. The state appreciated our assistance and we learned their criteria used to distinguish black ducks from black x mallard hybrids.





Assistant Managers Jasikoff (left) and Casey (right) trapped black ducks to meet the post season banding quota of 100 ducks. (Wrt-87, Gossfeld)

## H. PUBLIC USE

### 1. General

The 1987 calendar year visitor count for the refuge complex was 117,225 visitors. For Wertheim refuge the visitor count was 22,072. The increase was attributed to a more accurate data collecting method and the use of a traffic counter. It was not used at Wertheim's Indian Landing Nature Trail due to the high incidence of vandalism and theft that occur here.

Public use regulations for the complex were revised for inclusion into 50CFR. Minor changes were made to Wertheim, including the recommendation to allow for clamming, crabbing and mushroom picking.

Increased public awareness of the refuges was made this year through several media events; the highlight being an hour long television program of the refuge.

In-house guidelines for computing statistics for the monthly Public Use Report were written, based on actual counts of visitor activities. The count for each activity is a percentage of the total number of visitors. The total number of visitors is compiled from an average of the number of occupants from the recorded vehicles.



Copies of five refuge brochures have been completely exhausted with no funds allocated or budgeted for their replacement. Requests for brochure funding during the budget process were denied. Refuge staff/volunteers may soon begin Xeroxing copies to provide refuge visitors. The five brochures are: Wertheim's Indian Landing Nature Trail, Morton's bird list, general brochure and nature trail guide, and the Target Rock's general flyer. A reorder is not expected until FY89.

On June 1, ORP Bell visited the Museum of Long Island Natural Sciences at Stony Brook to determine its suitability for incorporating it in the training program for SCAs and other refuge volunteers. While there, Bell met, by chance, Director Steven Englebright and Dr. Margaret Conover. An impromptu guided tour of the museum was presented followed by a discussion exploring the possibility of co-sponsored environmental education programs. What prompted the discussion was the proposed establishment of an environmental education center at the vacated Q-1 building. It was thought that cooperative use of the facilities would increase the credibility of the refuge's teacher workshop and environmental education programs.

To increase our public visibility, Wertheim's general brochure was made available to the Suffolk County Visitors Information Office.

Several new signs were installed to assist visitors in locating the refuge. Two locator signs were installed along Montauk Highway and the nature trail direction signs were installed on the nature trail. The locator signs have increased the number of visitors to the office by 1000%, from approximately 120 in 1986 to approximately 1,200 in 1987.

Handicapped accessibility was taken into consideration during the renovation of the complex office and new construction for a walkway to the office.

## 2. Outdoor Classrooms - Students

During the year, 24 school groups (528 students) visited the refuge to conduct environmental education programs. This is a decrease of 12% from 1986. Some of the reasons noted were a lack of restroom facilities for the students and teachers and inclement weather forcing the cancellation of seven groups. All classes were given a ten minute orientation to the refuge. Most classes used the Owl Pond environmental education site, however some groups used the Indian Landing Nature Trail.

## 3. Outdoor Classrooms - Teachers



### 3. Outdoor Classrooms - Teachers

On May 3 and 16, ORP Bell gave a teachers workshop and was assisted by Bob Kent, an agent from the Cooperative Extension Association of Suffolk County. The information presented included three lesson plans from Project Wild and two plans from the Cooperative Extension Association of Suffolk County. The course was attended by fourteen teachers from Suffolk and Nassau County.

### 4. Interpretive Foot Trails

Manager Spaulding and ORP Bell met with Ray Corwin of the Long Island Greenbelt Trail Commission on March 13. This volunteer organization is establishing a hiking trail along the Carmans River corridor and they would like to extend it through Wertheim Refuge. We have reached a tentative agreement for such a trail along a portion of the east side of the refuge including the existing nature trail. Further discussions were held at a later date outlining the necessary restrictions to allow hikers access to the refuge. It was decided a letter of authorization would be required and access would only be during those months when there would be no conflict with wildlife management programs.

A new interpretive element surfaced along the Indian Landing Nature Trail. Two pair of bluebirds were observed along the trail in mid-April and later were found to be nesting.

Two news releases were sent out to 35 newspapers publicizing the availability of guided walks on weekends at the Indian Landing Nature Trail. Guided walks were given to 14 groups (218 people). The nature trail was closed approximately four months (April-July) to provide undisturbed habitat for young osprey. However, no nesting activity took place this year.

### 6. Interpretive Exhibits/Demonstrations

Refuge staff and the Division of Law Enforcement, Lawrence, NY, jointly manned a booth at the 1987 Sportsman's Exposition held at the Nassau Coliseum, January 22-25. The booth had displays on the Long Island Refuges and endangered species. Over 40,000 visitors attended.

On June 13, ORP Bell and SCA Volunteer Simon manned a booth at Brookhaven's Squassux Fair. The event was attended by approximately 400 people. A variety of free publications were offered and two volunteer applications were given out. Duck stamps were available for sale but none were sold.





The refuge displayed signs and provided information at a local marina known as Squassux Landing during their summer fair.  
(Wrt-87, Bell)

ORP Bell had spent several hours in May inquiring with NY DEC, Long Island State Parks, and Suffolk County Parks seeking a co-sponsor for National Fishing Week. Suffolk County had expressed some interest and requested a copy of the National Fishing Week package, but no action was taken on their part.

#### 7. Other Interpretive Programs

On June 1, ORP Bell visited the NY DEC offices at Stony Brook University. Fish literature was obtained and distributed at Wertheim's fishing access site for National Fishing Week.

On June 6, ORP Bell manned the refuge's fishing access site to meet with fishermen and pass out literature. A public news release regarding this had gone out earlier in the week. Only five fishermen were contacted.

Assistant Manager Jasikoff presented a talk/movie at a Girl Scout fund raiser in August regarding the Long Island Refuges and Long Island ecology.

Assistant Manager Jasikoff was filmed on September 2 by the Brookhaven Cable TV channel in a special event that was aired this fall on local channels as part of the "Long Island Outdoors Show". The hour-long broadcast was aired five times and consisted of an interview with Tom and TV host Bill Carll concerning refuge programs, some footage of Tom mist netting



River. The program was viewed by an estimated 55,000 viewers.

On September 28, ORP Bell was interviewed on a live broadcast from radio station WYNG AM 1440 from Babylon, NY. The interview pertained to the public use activities available on the Long Island refuges, problems associated with the refuge and hunting as a management tool. The broadcast was heard by an estimated 50,000 listeners.

#### 8. Hunting

Members of the Nacomic Gun Club were present on the refuge during the opening weekend of the waterfowl hunting season. Members of the club are entitled to retain their hunting rights on the refuge through the 1989 hunting season. Special Agents Bill Donato and Rick Perry were present on and around the refuge for opening day. No refuge violations were reported.

#### 9. Fishing

Several complaints were received this summer regarding the taking of undersized trout and the improper handling and release of trout at the Carmans River. An increased emphasis in educating fishermen will be made in the future to correct this. The NY DEC maintains the fishing access site at the north end of the refuge through a cooperative agreement with the refuge. They have done little in the way of maintenance of the site, however, this year they did spend one afternoon clearing brush to widen the parking lot.

#### 11. Wildlife Observation

The observation blind at the nature trail was vandalized several times over the course of the year. The last act of vandalism was severe enough to warrant the removal of the structure. There are no plans to replace it.

#### 17. Law Enforcement

This year's vandalism of the Indian Landing Nature Trail was worse than last year. Besides repeated incidences of vandalism to the kiosk, brochure box, trail signs, destruction of the entrance gate and destruction of the wildlife observation blind, a \$350 interpretive panel was stolen from the kiosk. In the two years of existence the cost of repairs and replacements to the kiosk has exceeded the original construction costs.

Other problems included the destruction of an entrance gate and the discovery of an underground fort built by

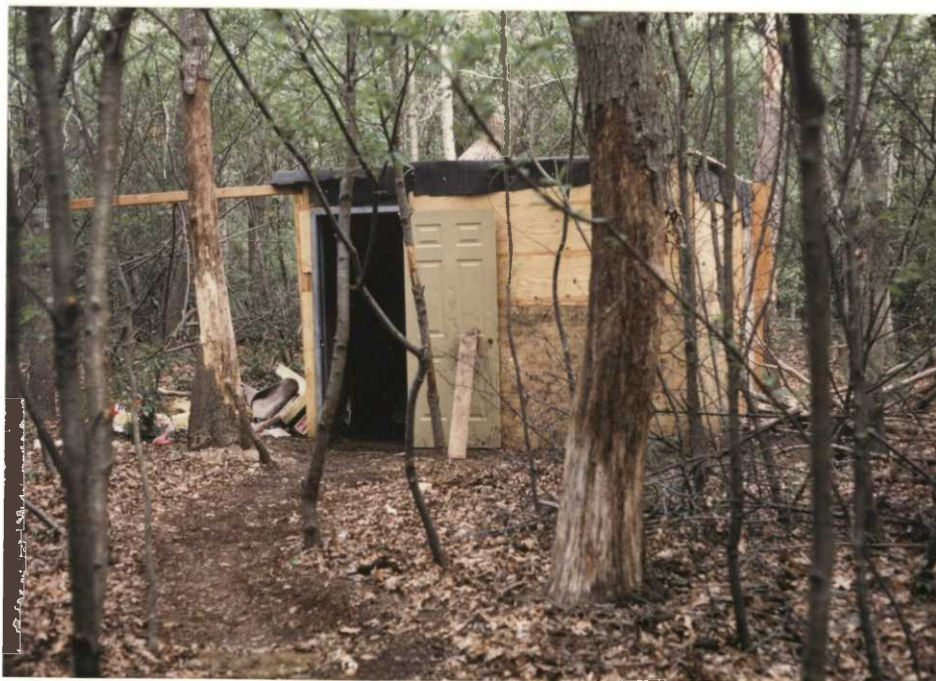


Other problems included the destruction of an entrance gate and the discovery of an underground fort built by neighborhood adolescents and a 12'x20' structure complete with steel door and new quarter-inch and half-inch plywood. This material was salvaged for future refuge projects.

A street drain was constructed on the refuge next to the Nature Trail parking lot by the Suffolk County Highway Department without refuge authorization.

The continual problem of trespass and dumping at the north end of Smith Path was solved through a cooperative effort between the refuge, Brookhaven Town road crews and Community Service Volunteers. Town equipment, Community Service trucks and refuge staff removed the existing debris and erected a large dirt mound/barricade across all entrances. A pipe gate was constructed and installed by refuge staff to give the refuge access to the area.

A used, and obviously illegal, hypodermic needle was found in the Indian Landing Nature Trail parking lot and the incident reported to Suffolk County Police.



Neighborhood adolescents used Wertheim refuge for clubhouse construction. (Wrt-87, Jasikoff)



The following table summarizes the documented incidents for 1987:

<u>Violations</u>	<u># of Violation Notices Issued</u>	<u># of Warnings</u>	<u># of Incidents</u>
Trespass	6	6	
Possession of weapon	2		
Hunting	1		
Vandalism			12
Arson/campfire			3
Illegal entry			2
Encroachment			2
Illegal structure			1
Theft (govt property)			3

#### 20. Other Programs

On June 12, Assistant Manager Jasikoff spoke to Brookhaven residents at their village association meeting. Tom was well received and the meeting generated a well-written newspaper article in the Long Island Advance.

Assistant Manager Jasikoff met with Newsday photographers on August 20 to provide photos for an article regarding Lyme disease and use of Damminix as a control agent.

ORP Bell attended a Long Island Naturalist meeting on September 11. The organization meets four times a year to exchange ideas and attend workshops.

On September 17, Assistant Manager Jasikoff responded to an informational request by Congressman Hockburckner's office regarding mosquito on Wertheim Refuge. Specifically, the Congressman wanted to know why Suffolk County Vector Control cannot spray insecticides on the refuge. Jasikoff referred to the law suit filed by conservation groups against James Watt and the actions taken as a result of that suit.

Assistant Manager Jasikoff attended a Brookhaven Town Board meeting open to the public to comment on the Town's master plan and proposed upzoning of land, including Wertheim NWR. Tom submitted a written response to Town Supervisor Henrietta Acampora.

On September 21, ORP Bell participated in a three hour entomology workshop sponsored by the Suffolk County Cooperative Extension agency. Also attending was Wertheim Volunteer Sofia Spataro.

Assistant Manager Jasikoff and ORP Bell were interviewed by reporter Lisa Finnegan from the North Shore Record. The



interview focused on public use activities and wildlife management activities.

One other public use related activity occurred in December. ORP Bell completed the handicapped accessibility evaluation for the Long Island Complex. The onsite inspection took five days and assistance was provided by the Suffolk Independent Living Organization. The evaluation required approximately 80 forms. This exercise showed that most of our facilities were not handicapped accessible including some facilities supposedly built as such.

## 21. Take Pride

Take Pride was incorporated into many programs this year through the following means:

	<u># of Each</u>	<u># of Participants</u>
Guided walks	14	278
Programs on/off site	3	419
Media contacts:		
News releases	2	300,000 (10% of LI pop)
Radio interviews	1	50,000
Television	1	55,000
Newspaper interviews	2	35,000
Distribution of:		
Take Pride trash bags	300	
Take Pride literature	250	
Take Pride workfest	1	6

## I. EQUIPMENT AND FACILITIES

### 1. New Construction

New pipe gates were installed in September at each end of Smith Path and a third gate installed where Hay Road and the Wertheim's southern boundary meet to prevent illegal vehicle access through the refuge. A decrease in illegal trespass was evident soon after the gates were installed.

A water line was installed at Wertheim from the pump in the basement of Q-1 to the back of the shop. Prior to this work, the shop did not have running water. The terminus of the line is a hydrant type spigot with an underground shut off valve to allow for running water year round at the unheated shop. Running water is necessary for numerous and various maintenance activities as well as for safety purposes.

A 13'x6'x2' cement foundation for a vehicle lift, picked up as excess property from Fire Island National Seashore in



1986, was poured in August. The lift itself is scheduled for completion in FY-88 and will greatly enhance vehicle repair and maintenance capabilities.

A flag pole, picked up as excess from Fire Island National Seashore, was erected in front of the Wertheim office in August. The flying of "old glory" complements the other headquarters improvements made during the year.

## 2. Rehabilitation

The refuge main entrance sign and nature trail sign were erected during April. Extra precautions were taken to prevent vehicle destruction to the signs by placing wooden barriers in front of each. The original entrance sign was destroyed by vandals in 1986. Also, two refuge directional locator signs were installed along Montauk Highway. As mentioned in section H, the signs increased public visitation to the refuge significantly.

A stockade fence was installed around the yard of Q-1 in March to provide added privacy for the occupants.

Cement walkways were installed by refuge staff at the Wellington dormitory and cottage in June. The new walks are much safer and more practical than the previous old bluestone walkway.

Under the direction of Maintenance worker Rokus, the old dilapidated boat dock was dismantled and replaced by a much sturdier and practical version. Pressure treated, tongue-and-groove 2x10's were used on the sides to prevent the refuge boats from floating underneath the dock at low tide and forcing the dock upwards at high tide. Pressure treated 6x6's were jettied in by using a water pump and 12' long pipe with nozzle, which was borrowed from the Fire Island National Sea Shore.

A new roof and deck was installed by Community Service volunteers above the sunporch at the Wellington dormitory in August. The previous deck had rotted beyond repair and posed a safety hazard.

The roof on Q-1 was replaced in March by force account after having sustained major damage during Hurricane Gloria in September, 1985, and subsequent blow-downs of remaining trees. Roof leakage had become fairly serious so several panels of the sub-roof were replaced because of rot caused by the leaking shingles. The entire interior was repainted the following week.





The refuge boat dock before re-construction.  
(Wrt-87, Jasikoff)



The refuge boat dock during re-construction.  
(Wrt-87, Jasikoff)





Maintenance Worker Marto used the new front end loader/back hoe to install a water line to the shop. (Wrt-87, Jasikoff)



Maintenance Worker Rokus constructing a boardwalk entrance to the Wertheim office. (Wrt-87, Jasikoff)





Reroofing of Q-1. (Wrt-87, Jasikoff)

Several loads of crushed stone were picked up with the refuge dump truck in March and spread along muddy sections of the entrance road and headquarters area.



Several loads of crushed stone were tailgate spread on Wertheim's entrance road. (Wrt-87, Jasikoff)



The paddock house (Q-7) at Target Rock was readied for the arrival of Ray Whittemore and family in November. Work included a complete repainting of the interior, installation of new sheet rock in the dining room and living room, installation of a new stove, refrigerator, screen doors, ground fault interrupter electrical plugs, shelving and insulation, and an overall cleaning.

### 3. Major Maintenance

The refuge staff, under the direction of Acting Project Leader Jasikoff, proposed and began one of the biggest maintenance projects ever undertaken at the Long Island Complex - the complete interior renovation of the Wertheim headquarters office. Refuge Supervisor Gavutis approved the project proposal in August and provided funding via salary savings, which had been previously frozen, from vacancies created by the transfer of Managers Spaulding and Glynn. Ordering of materials and supplies began in August and renovation was underway by September. By years end, 80% of the project was completed with flooring, carpeting, cabinets, visitor's counter and some plumbing work still needing to be done. The need for renovation was undeniable and extensive! When the Long Island Refuge Complex headquarters was moved from Target Rock Refuge to Wertheim Refuge, on April 1, 1982, only minor improvements were made to the interior of the old Wertheim hunting lodge before serving as the headquarters office. The building had been constructed in a rather makeshift fashion, with sections being added-on gradually over time. The main part of the building was built by overturning an old river barge onto wooden timbers. Until this summer, few improvements had been made by refuge staff to correct structural deficiencies and improve aesthetic qualities - which were in desperate need of improvement.

Approximately \$15,000 have been spent, on materials alone, to renovate the office building. All of the work has been done by force account and volunteer help.

The electrical and plumbing systems were completely overhauled and replaced by Assistant Manager Casey and inspected by Volunteer Jim Daniels, who is a certified and licensed master electrician retired from the U.S. Park Service at Fire Island National Seashore. Mr. Daniels also installed a new fuse 60 x panel and rerouted the main electrical feed in. The office received a new drop ceiling, wall paneling, paint, closets, exterior doors, seven new windows, blinds, shelves, flooring, baseboard heating, carpeting, room air conditioners, bathroom fixtures, utility sink and cabinetry. Several internal walls were removed and the screen-in porch



was winterized and made part of the office to provide additional space and facilitate the welcoming of visitors and provide for handicap accessibility. The spare bathroom was converted into a storage/file room. An outside deck was attached to the building and boardwalk entrance constructed earlier in the summer (see section I, 1). Telephone lines and alarm wires were rerouted to conform to the interior changes made and eliminate safety hazards. "Operation facelift" dominated the agenda of the refuge staff for four months. Many safety deficiencies that had been hidden and unidentified during 1986 engineering inspections were discovered during renovation. The barge section of the building was gutted in order to remove and replace broken floor timbers, and jack up the remaining beam/joists to actually level the building and floor! The main weight carrying portion for the building was wholly inadequate and was actually bulging out. A new carrying wall was installed exceeding standard building codes. Without an extremely talented and capable maintenance staff and a commitment to team effort and cooperation by the entire staff, such a large project could never have been attempted, no less completed, in such a professionally, well done manner that it has. Although the entire staff participated in varying degrees with the actual renovation, special recognition is given to Maintenance Worker Rokus, Laborer Lima and Assistant Manager Casey, who executed the bulk of the work. A project of this magnitude, had it been contracted out, would have cost the government at least \$75,000, and probably a lot more.



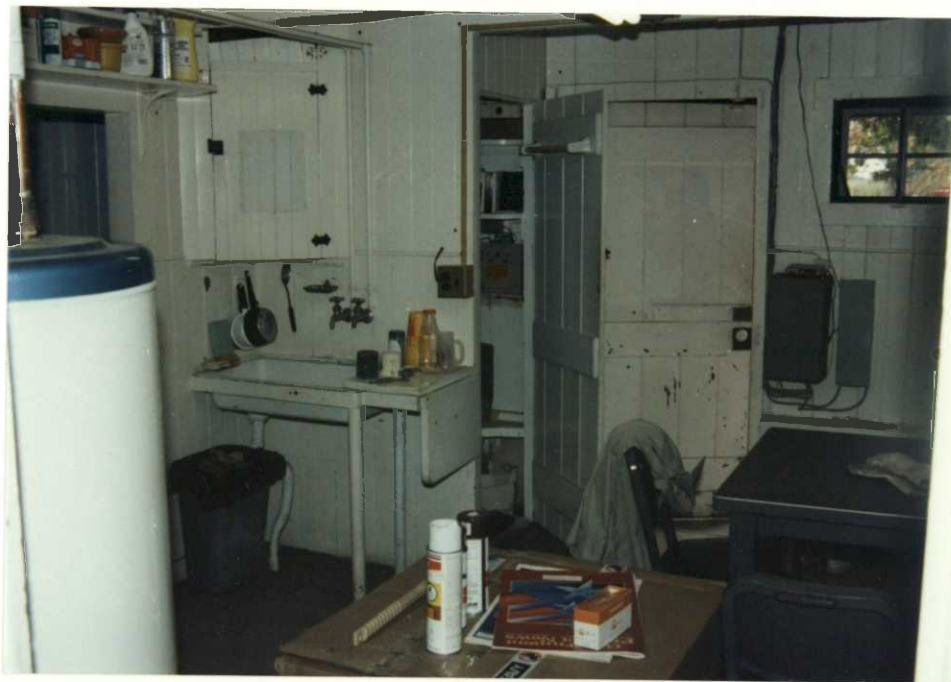
The entire interior of the Wertheim office was rehabilitated during 1987. (Wrt-87, Jasikoff)





Assistant Refuge Manager Casey takes a break from digging out the crawl space underneath the office, as part of the office rehabilitation. Rotten floor timbers had to be replaced and the floor jacked and leveled. (Wrt-87, Jasikoff)





A view of the Wertheim office before interior renovation.  
(Wrt-87, Jasikoff)



A view of the Wertheim office after interior renovation.  
(Wrt-87, Jasikoff)





A view of the Wertheim office before interior renovation.  
(Wrt-87, Jasikoff)



A view of the Wertheim office after interior renovation.  
(Wrt-87, Jasikoff)





A view of the Wertheim office before interior renovation.  
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A view of the Wertheim office after interior renovation.  
(Wrt-87, Jasikoff)





A view of the Wertheim office before interior renovation.  
(Wrt-87, Jasikoff)



A view of the Wertheim office after interior renovation.  
(Wrt-87, Jasikoff)



Several major improvements were made to the Wellington Dormitory during the year thanks to the community service program, SCA's, and volunteer time donated by Assistant Manager Casey and Laborer Lima, which culminated in the presentation of a Special Achievement Award to Paul Casey (see section E.8). The kitchen and attached pantry, and bathroom was completely renovated, receiving new electrical and plumbing systems. A new kitchen counter was built and sink installed. All the walls received a sanding and new paint, and new tile was laid in the kitchen. Floors of five of the six bathrooms in the dorm were tiled with industrial grade one-inch square ceramic tile by community service volunteers using excess and screened materials procured from the Eastern Shore of Virginia Refuge. Two of the four bathrooms were overhauled, and one gutted, in order to correct plumbing electrical deficiencies. The plaster walls and ceiling of the living room were removed to ready it for replacement with a drop ceiling and paneling in FY-88. The dining room was completely renovated, receiving new paint, molding and drop ceiling. The corroded and leaky plumbing system in the basement of the building was also largely replaced with PVC piping by Laborer Lima and Maintenance Worker Marto. Several of the upstairs bedrooms were repainted by SCA volunteers.

When the Wellington dorm became part of the refuge, via donation, five years ago, no funds were allocated to correct building deficiencies. Meanwhile, the building served an important function in housing SCA volunteers, temporary and permanent staff and Seatuck research interns. Many of the improvements completed during the year have made the building a much nicer place to live and have been accomplished at virtually no cost to the refuge as a result of committed and motivated staff who are willing to devote personal time towards making improvements and innovative and frugal management practices.

#### 4. Equipment Utilization and Replacement

The GMC 6000 dump truck was taken to the local GMC dealer on March 9 for further investigation into shifting problems which had necessitated warranty repairs in December, 1986. The shifting problem was not corrected to the satisfaction of the refuge staff the first time repairs were made and a report of deficiency was submitted to GSA. After a little arm twisting, the clutch work was completed under warranty in April.

A four-wheel all terrain vehicle (ATV) was picked up at the factory in New Jersey in February, after having been



purchased with FY-86 small ARMM's funds. The ATV will be used primarily on the beach at Morton NWR and will thus, help to reduce wear and tear on the 4x4 Jeep Scrambler.

Rear brakes were replaced on the 3/4 ton Dodge pick-up in March by refuge staff. Wertheim's sandy roads played havoc with vehicular moving parts. The power steering unit in the GMC dump truck was also repaired by force account.

A new 1987 4x2 Dodge pick-up was delivered from the assembly plant and arrived on April 27. The much needed vehicle was put to immediate use. The Long Island Refuge Complex vehicle fleet is comprised of eight vehicles. Considerable time was spent by Maintenance Worker Marto repairing the 85 hp Evinrude outboard motor in July; technical assistance was lent by a marine motor mechanic at Fire Island National Seashore before getting the outboard to work properly. The refuge's bass boat was also pulled from the water and reconditioned during July.

Water softening and purification systems were installed by a contractor at the residences and office at Wertheim and water filters installed at the Target Rock residences during August. Based upon water tests conducted by Suffolk County Department of Health Services, concentrations of iron, in excess of recommended standards have been consistently found in drinking water samples at Wellington and Wertheim and concentrations of the volatile organic compound trichloromethane, exceeding maximum acceptable standards, have been found in the Target Rock water supply. To accomplish water purification goals, \$4,000 realized from salary savings, were authorized to be spent for the installation of two water softener and acid reduction systems at Wertheim and five under-the-sink carbon filtration units at Wertheim and Target Rock refuges.

The refuge received its new 1400B JCB front end loader/backhoe in September. This equipment was purchased with large ARMM's money for \$30,000. The backhoe/loader compliments existing refuge equipment and will facilitate improved work efficiency and allow staff to accomplish numerous tasks that were previously impossible such as installing culverts and water control structures and loading fill from the barrow pit for overdue road repairs.

##### 5. Communications Systems

All refuge portable radios were sent to a repair shop for refurbishing. It was discovered that several of the radios are beyond repair and will therefore be excessed/surveyed. All of the refuge portable radios are old and should be replaced with more modern equipment as funding allows.



## 6. Computer Systems

The refuge's new computer system arrived in November consisting of a PC's Limited 286 main drive, keyboard, screen, printer and various software packages. The computer will be operational in 1988 and pertinent staff will receive training for it's use. A consolidated order of these computers was made by the regional office for all R-5 stations.

## 7. Energy Conservation

Sixty storm windows with screens were installed in the Wellington dormitory in August by a local contractor for \$4,500. Scraping and painting of existing window sills and frames were accomplished by force account prior to installation. The improved ventilation and energy conservation resulting from the new windows will be a benefit to both residents and the refuge.

## 8. Other

Maintenance Worker Marto doubled the width of a section of the entrance road in May with the help of the John Deere 550A dozer and volunteer help. Many stumps along the side of the road were removed and a hazardous 90 degree turn improved.



The Wertheim entrance road widened to permit safer vehicular access. (Wrt-87, Jasikoff)



Several miles of fire trail were cleared, dozed and widened, and the barrow pit made accessible by Maintenance Worker Marto, in the summer, to accommodate heavy equipment and prepare for the Big Fish Creek dike project. A 200 ft. section of Smith Path, which was impassable, was stabilized with 120 square yards of loam purchased through the contractor.

#### J. OTHER ITEMS

##### 3. Items of Interest

Managers Spaulding and Jasikoff served as Long Island and New York Harbor oil spill field response coordinator and alternate, respectively, during the year. No significant oil spills occurred.

Since Hurricane Gloria in September of 85, strong winds have toppled pine trees on three occasions at the Wertheim office complex. The latest (February) was a forty foot tree next to the office that sheared off 20 ft. above the ground. The top half landed 15 feet away, upright against a stand of oaks. Had the wind been blowing in the opposite direction, it would have landed in the kitchen of the office where the staff was having lunch.

##### 4. Credits

Sections A, B, C, D, E, F, G, I, and J were written by Tom Jasikoff, and edited by Ray Whittemore.

Section H was written by Jim Bell, edited by Ray Whittemore.



## AMAGANSETT NATIONAL WILDLIFE REFUGE

Amagansett, New York

Amagansett National Wildlife Refuge consists of 36 acres of barrier beach and primary dune habitat, located in the unique double dune barrier beach area near East Hampton, New York. Several species of plants indigenous to the barrier beaches of the mid-Atlantic coast can be found here in their natural environment. The area is bordered by 100 acres of undeveloped land owned by The Nature Conservancy. This area is said to be the only unaltered area of its size and type remaining on Long Island.

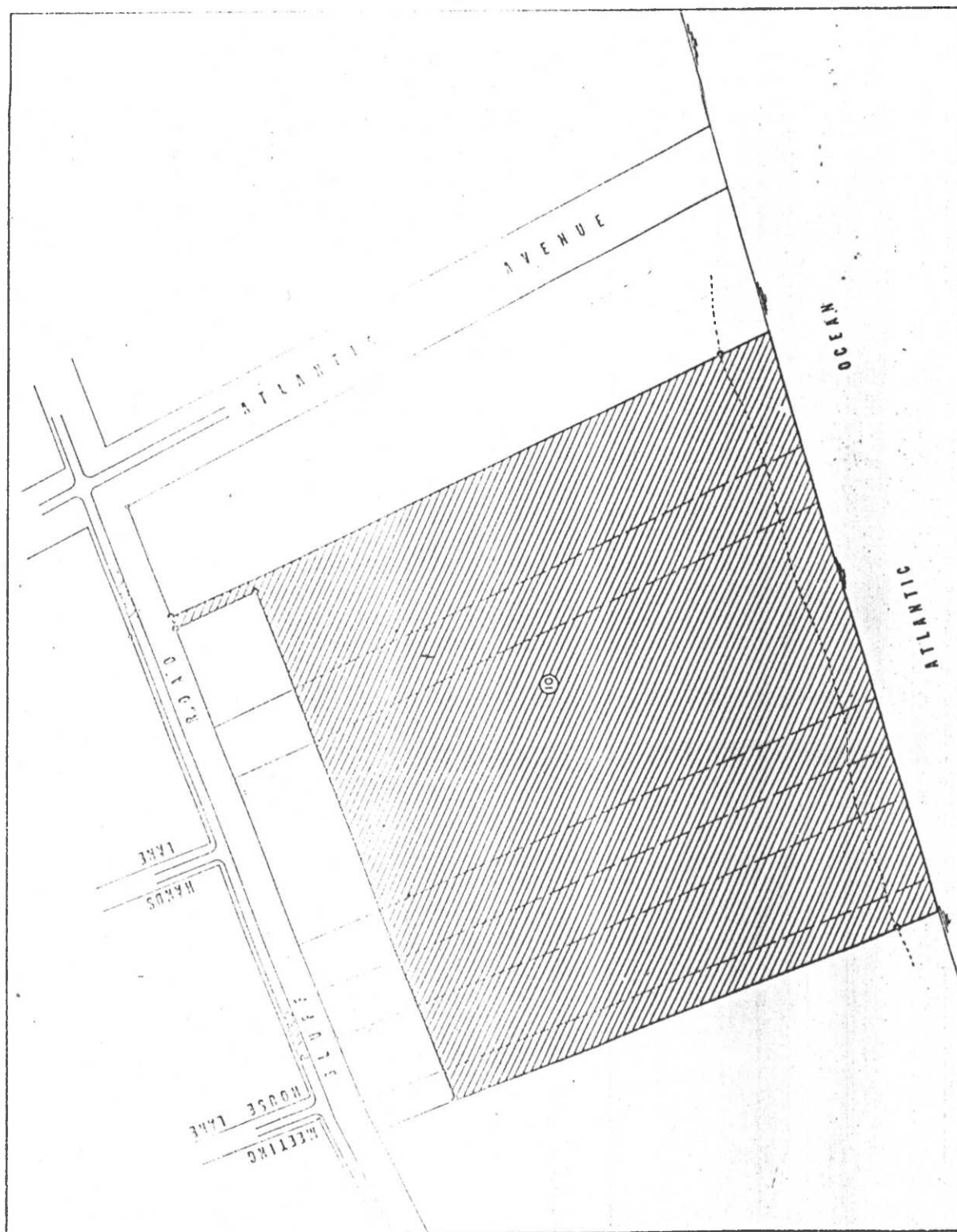
The refuge is infrequently patrolled by refuge staff. The Nature Conservancy has an office which overlooks the property and they advise us of any problems. The major problem occurring in this area is the blowout of the primary dunes due to sunbathers taking shortcuts to the beach through refuge property. Snow fence was placed on the dune in the area of the blowout again this year in an attempt to discourage trespass and foster dune building.

A Fire Control Cooperative agreement between the U.S. Fish and Wildlife Service (Amagansett NWR) and the Amagansett Fire District is maintained.



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COPIED IN THE DIVISION OF EMPLOYMENT  
FROM SURVEYS BY F.B.I.  
BOSTON, MASSACHUSETTS  
MAY

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23	85	30	10	5	2
24	85	30	10	5	2



## CONSCIENCE POINT NATIONAL WILDLIFE REFUGE

Conscience Point National Wildlife Refuge is located near North Sea, New York, approximately five miles west of Morton National Wildlife Refuge.

This 60-acre parcel of land consists of old field, oak-beech climax forest, small kettle holes, freshwater marsh and a 15-acre salt marsh. This habitat is very diverse and has species diversity probably unequaled within such a small acreage.

The refuge is used, with a permit, by school groups and conservation groups for wildlife oriented activities only.

There was no habitat management performed on the refuge this year. Wildlife surveys indicate a diversity of species using the refuge including the American black duck, Canada geese, mallards, great blue heron, American bittern, red-tailed hawk, northern harrier, red-shouldered hawk and an abundance of white-tailed deer.

The refuge is patrolled infrequently by refuge staff from Wertheim.

A Fire Control Cooperative Agreement between the Service (Conscience Point NWR) and the North Sea Fire Department is maintained.

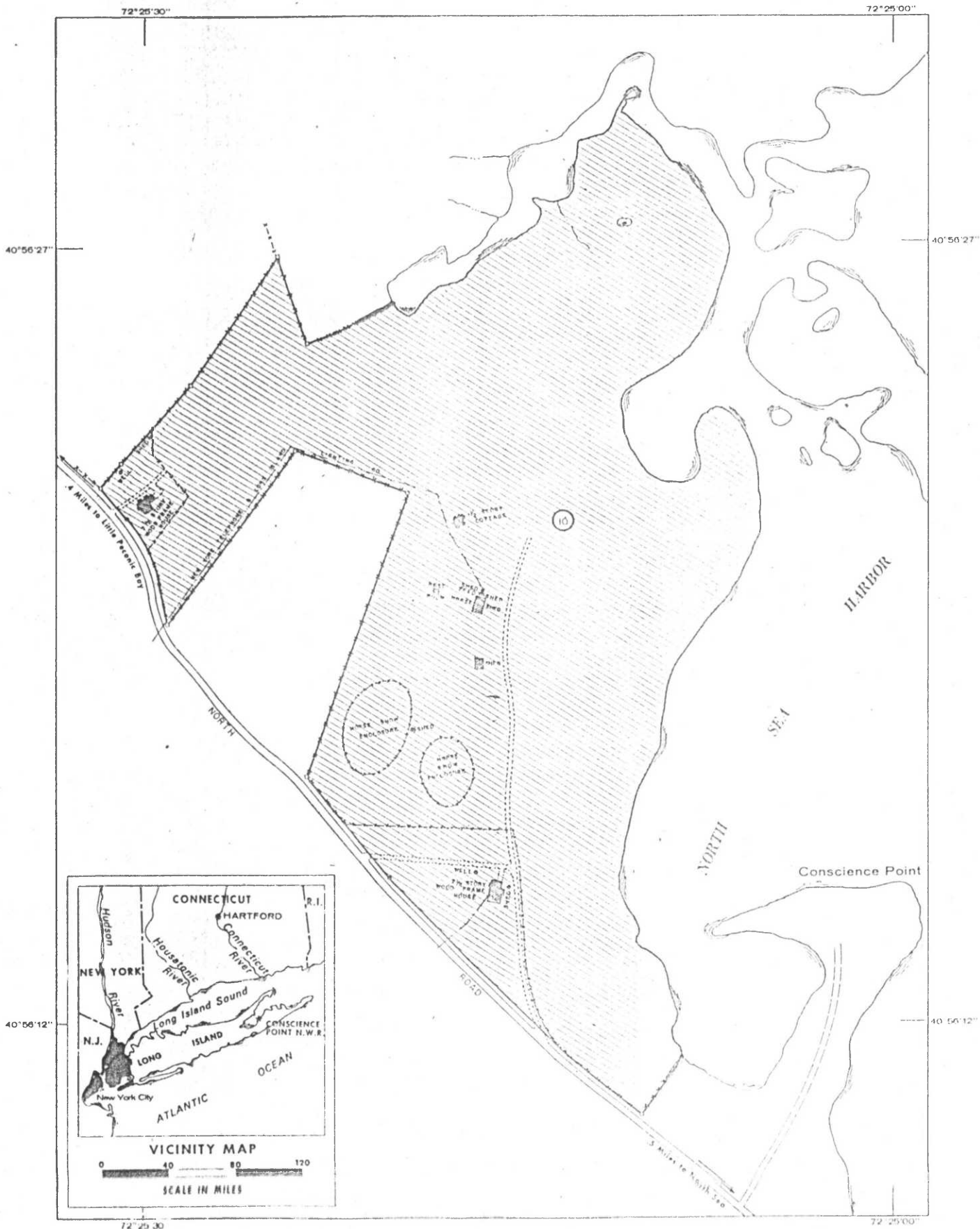


## CONSCIENCE POINT NATIONAL WILDLIFE REFUGE

UNITED STATES  
DEPARTMENT OF THE INTERIOR

SUFFOLK COUNTY, NEW YORK

UNITED STATES  
FISH AND WILDLIFE SERVICE



COMPILED IN THE DIVISION OF REALTY  
FROM SURVEYS BY U.S.G.S. AND U.S.F.A.W.S.

BOSTON, MASSACHUSETTS JUNE 1970, REV. AUGUST 1978

1. Magnetic

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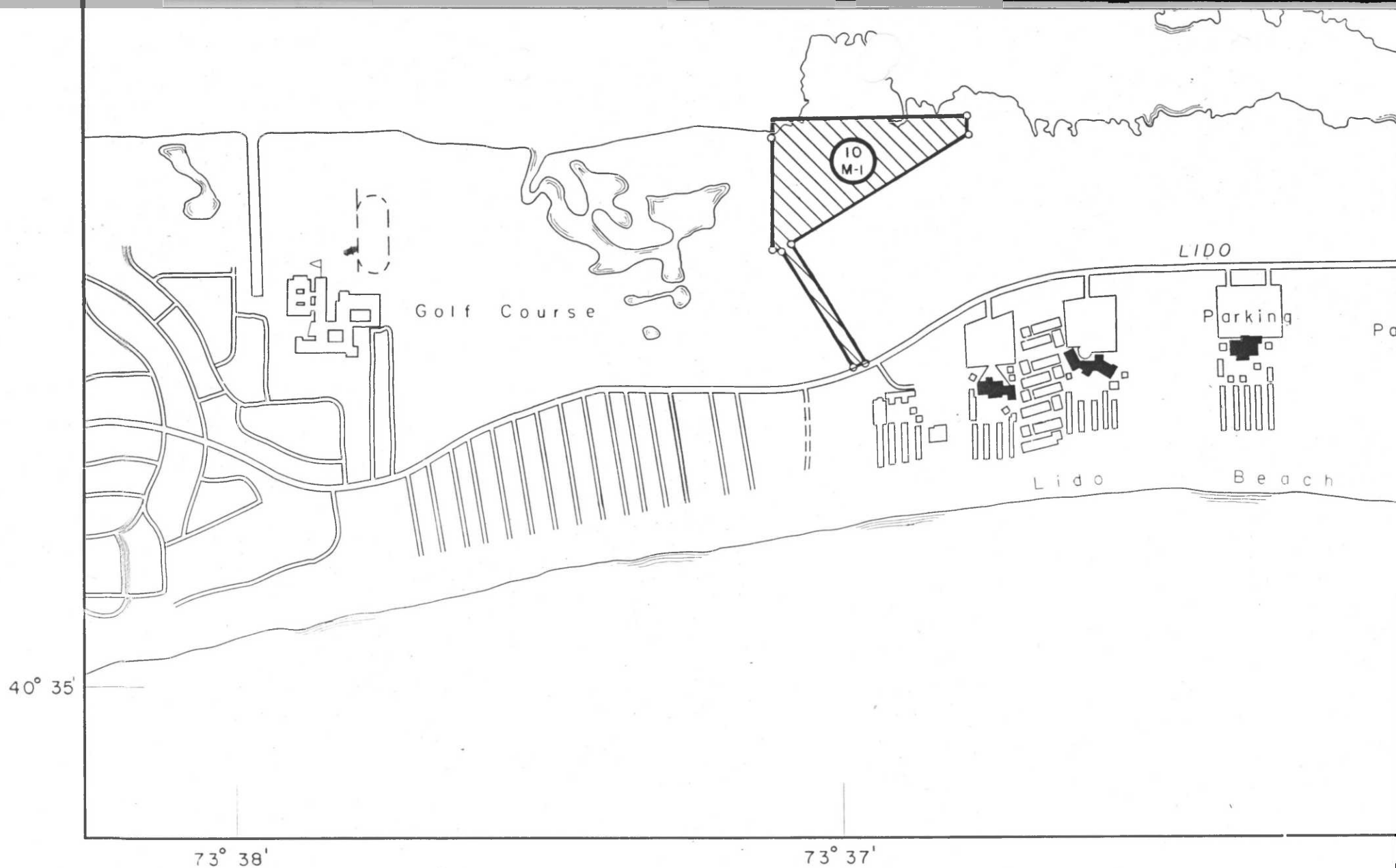
## **LIDO BEACH WILDLIFE MANAGEMENT AREA**

Lido Beach, New York

Lido Beach Wildlife Management Area is located on the south shore of Long Island approximately 20 miles east of New York City. It is administered through the main office of the Long Island Refuge Complex at Wertheim National Wildlife Refuge. The area is 22 acres of marsh and part of the Hempstead estuary. The Long Beach School District operates an Environmental Education Center named SEALINK, adjacent to the refuge. Through a cooperative agreement, they conduct environmental education programs on the property. This year 3,200 students and 146 teachers used the area.

Tentative plans were made for the ORP to participate in the 1987 teacher workshop conducted by SEALINK. The workshop was cancelled however. The ORP is planning to participate in future workshops.





COMPILED IN THE DIVISION OF ENGINEERING  
FROM SURVEYS BY G. S.

BOSTON, MASSACHUSETTS

FEB. 1971

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MORTON NATIONAL WILDLIFE REFUGE

Sag Harbor, New York

ANNUAL NARRATIVE REPORT

Calendar Year 1987

U.S. Department of the Interior  
Fish and Wildlife Service  
NATIONAL WILDLIFE REFUGE SYSTEM

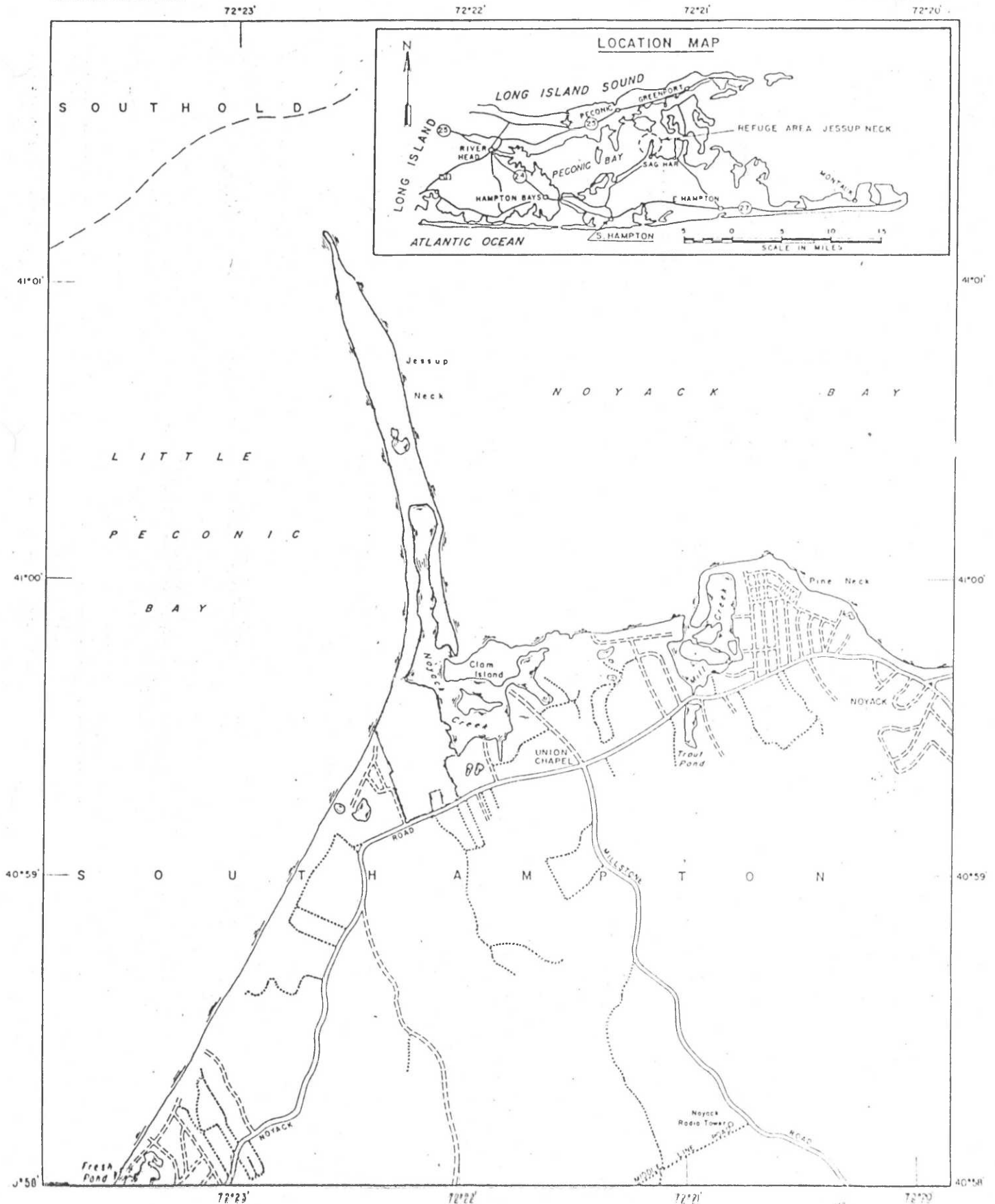


# MORTON NATIONAL WILDLIFE REFUGE

SUFFOLK COUNTY, NEW YORK

UNITED STATES  
DEPARTMENT OF THE INTERIOR

UNITED STATES  
FISH AND WILDLIFE SERVICE



COMPILED IN THE DIVISION OF ENGINEERING  
FROM SURVEYS BY G.S. AND F.W.S.

BOSTON, MASSACHUSETTS APRIL 1964  
POSTED: APRIL 1964

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## INTRODUCTION

Morton National Wildlife Refuge is a 187 acre peninsula located on the north shore of Long Island's south fork in Southampton Township. It was acquired in 1954 as a gift from Elizabeth Morton. This one and one-half mile long peninsula, known by the local residents as Jessup Neck, separates Little Peconic Bay from Noyac Bay.

Morton has been a one person satellite refuge of the Long Island Refuge Complex. The complex headquarters is located 40 miles to the west, in Shirley.

Three miles of narrow undeveloped shoreline consisting of sand and small stones outline the refuge. The tip of the neck has steep and heavily eroded bluffs approaching 50 feet in height. Morton also contains upland deciduous forest, a small freshwater pond, a brackish pond, kettle holes, tidal flats, salt marsh, freshwater marsh, and old fields. Annual visitation is about 40,000.





A friendly welcome, and a favorite attraction of visitors.  
(Mrt-84, Hall)

A. HIGHLIGHTS

On September 9, ORP Bell met with botanists from the New York Botanical Gardens, a Newsday reporter and two visiting botanists from the Soviet Union. The group met at Morton NWR to view and investigate a swamp cottonwood tree (*Populus heterophylla*) which survives on the refuge. Morton NWR is near the tree's most northern range.



Prothonotary warbler was seen on the refuge, and will be added to the bird list.

#### B. CLIMATIC CONDITIONS

This information is covered in the Wertheim section of the narrative.

#### E. ADMINISTRATION

##### 1. Personnel

Morton NWR is administered as a satellite refuge of Wertheim where all permanent staff are assigned.

Two SCA volunteers were assigned to Morton and served as tern wardens, performed routine maintenance tasks and gave nature walks.

Donald Lima	March - June
Suzanne Unangst	June - August

##### 4. Volunteer Programs

During the year, Volunteers Fred Zeller, Jim Bowden and Marsha Meyer, provided 635 hours of service. Most of the hours have been donated by Fred Zeller who enjoys walking through Morton. His presence has been a big help to us during the winter when we have no staff stationed there. Marsh Meyer has spent time assisting Okeanos Ocean Research Foundation with the marine turtle watch. This program is conducted during the winter to locate cold water stressed marine turtles and to provide assistance in rehabilitating stressed turtles.

##### 8. Other

In April, SCA Lima posted all of Jessup Neck with AREA CLOSED and boundary signs to minimize human disturbance to nesting birds.



## F. HABITAT MANAGEMENT

### 1. General

Morton NWR consists of 187 acres with a diversity of habitats that make it function ecologically as a much larger area. The refuge is separated into two distinct parcels; 77 acres of upland on the mainland and a 110 acre peninsula known locally as Jessup Neck. The mainland portion consists of an oak-hickory climax forest with open field, freshwater pond and heavily brushed old fields. The Jessup Neck portion has salt marsh/beach dune complex, freshwater marsh, lagoon, kettle holes, a brackish pond and an oak-hickory climax forest.



Jessup Neck; the main attraction of Morton NWR.  
(Mrt-80, files)



## 2. Wetlands

In the spring and early summer all the refuge ponds, kettleholes and marshes were filled to capacity. By late summer the feeder stream to the fresh water impoundment runs intermittently, then dries up. The kettleholes and fresh water marshes dry also as the water table drops. This drop in the water table has been occurring for the past 15 years due to the greater demand on the aquifer by residential development in the area.

The spread of phragmites continues in the salt and brackish marsh areas of the refuge and we plan to eradicate this undesirable plant with the herbicide Rodeo® when New York state permits are approved.

## 3. Forests

The refuge contains approximately 47 acres of upland deciduous forest consisting primarily of oak-hickory stands with several small stands of red maple and eastern red cedar. An obvious browse line is developing on the mainland and exists on the peninsular sections of the refuge. This over-utilization of habitat will be monitored and more deer herd population studies will be conducted to determine if a herd reduction will be necessary.

## 5. Grasslands

The refuge maintains three fields of one, three and five acres to provide food, nesting cover and edge for upland birds. No mowing was done in 1987.

## 9. Fire Management

A Fire Suppression Cooperative Agreement is maintained between the Fish and Wildlife Service (Morton NWR) and the Sag Harbor Volunteer Fire Department. The fire access roads, equipment and volunteers are adequate for any wildfire on the mainland portion of the refuge. The peninsula portion of the refuge (Jessup Neck) has no access road, and because of the loose sandy beach, access is limited to four-wheel drive vehicles, boats and by foot. Firefighting would be limited to the use of backpack sprayers and portable pumpers. Initial attack for wildfires will be carried out by Sag Harbor Fire Department and refuge staff.

## 11. Water Rights

The refuge lies within an area which has a sole source aquifer. Significant development within the past 15 years has caused a lowering of the water table. The transition of



the main spring on the refuge from permanent flow to intermittent is believed to be a result of this dewatering.

All freshwater wetlands are fed from springs on the refuge. A single well point supplies the office, restrooms and quarters.

## 12. Wilderness and Special Areas

Jessup Neck is designated a Public Use Natural Area. The area encompasses 110 acres and includes a lagoon, salt marsh, beach dune complex, kettle holes, cattail marshes and oak-hickory climax forest. The peninsula averages 100 yards wide and is 1.5 miles long. The area is a unique geological formation left by the Wisconsin glacier. Manipulation is restricted to maintenance of the foot trail. The area provides nesting habitat for several endangered and threatened species (see section G-2).

## G. WILDLIFE

### 1. Wildlife Diversity

Morton refuge supports more than two hundred species of birds and over 20 species of mammals. The wide range of habitat allows for a greater diversity of wildlife on the refuge.

### 2. Endangered and/or Threatened Species

The Jessup Neck portion of the refuge provides nesting, feeding and resting habitat for the osprey, NYS threatened species, as well as the piping plover and least tern, NYS endangered species.

The northern three-quarters of Jessup Neck was closed to the public during the nesting season (April-August) to reduce human disturbance. Closure of the area helps to protect endangered and threatened species; unfortunately no piping plovers or least terns nested. SCA volunteers and refuge staff patrolled the area. The first piping plover was seen on April 11 and other observations were made in May and June.

Several pair of least tern were observed displaying courtship behavior. The terns used the refuge extensively for a feeding and resting area.

Osprey were observed daily on Jessup Neck from May to August. Between two to six osprey utilized the neck as a resting area while feeding in the adjacent bays and lagoon. In May,



osprey were observed bringing sticks to the old brackish pond nest and were even seen sitting in the nest, but no nesting occurred. Osprey were also seen bringing sticks to, and feeding on, a snag on the sand spit leading to the neck. They failed to build a nest.



A look-out on its favorite perch; one of 5-6 ospreys that use Morton NWR. (Mrt-83, Spaulding)

### 3. Waterfowl

Wintering waterfowl populations were normal in comparison to previous years, with an average count of 250-300 ducks. Canada geese, bufflehead, black duck, mallard, common and red-breasted mergansers and old squaw were the dominant waterfowl species using the refuge.

### 4. Marsh and Waterbirds

The number of snowy egrets using the refuge has leveled off. Great blue and green-backed herons are common; all concentrating on the lagoon and brackish pond on Jessup Neck. The most common waterbird is the double-crested cormorant which feeds in the adjacent bays and rest on the northern tip of the neck.





Snowy egret showing off its golden slipper.  
(Mrt-68, Coggeshall)

#### 5. Shorebirds, Gulls, Terns, and Allied Species

Refuge use by shorebirds remained normal. Ring-billed, herring and great black-backed gulls use the refuge lagoon and brackish pond throughout the year.

Piping plover, sanderlings, common and least tern, ruddy tern, stone and black-bellied plover were observed on the refuge from May through August.

Due to the deposition trends of the adjacent bays, the northern tip of Jessup Neck is gaining new beach providing additional habitat for the plovers, terns and other shorebirds.

#### 6. Raptors

Osprey, northern harrier, sharp-shinned hawk, American kestrel and red-tailed hawk were observed on the refuge.

#### 7. Other Migratory Birds

During May and June, approximately 40 bank swallows established a colony in the bluffs on the west side of Jessup Neck. The swallows successfully produced and fledged approximately 20 young.





A "holey" place; a successful bank swallow colony.  
(Mrt-81, files)

A prothonotary warbler was observed by SCA Lima on May 2 & 3. This bird will be added to the bird list.

A royal tern was observed twice in August, an unusual visitor to the refuge.

#### 8. Game Mammals

The white-tailed deer population on the refuge is estimated to number 20, determined by visual sightings and snow track count surveys. A browse line of two to four feet is evident on Jessup Neck and developing on the mainland section of the refuge. The area surrounding the refuge is being developed rapidly and pushing the deer into the undisturbed wooded areas. As the development increases, the area open to public hunting are reduced further adding to the herd concentrations. If further population studies and evidence indicate over population, a herd reduction may be necessary.

Red fox were occasionally observed on the refuge and a den was found in the bluffs on the west side of Jessup Neck; at least one kit was produced.

The populations of eastern grey squirrels, eastern cotton tails, opossum, and muskrat appear stable.



The raccoon population appears to be increasing, based on scat groups observed, and will be monitored to observe the effects on nesting waterfowl and shore birds.

## 12. Wildlife Propagation and Stocking

In July and August, 2100 mud fiddler crabs were trapped at Morton's salt marsh and transplanted to Wertheim to be reintroduced into the Carmans River estuary.

During the reintroduction females were misrepresented, so a special attempt was made to trap more females in order to balance the sex ratio. Four release sites were chosen at Wertheim refuge and an even sex ratio (50:50) of males to females was released at each site.

In 1988 efforts will be made to determine the success of the reintroduction made to date, and a decision will be made whether to continue the stocking.

## 15. Animal Control

In May, several dogs were seen on the refuge and two dogs were observed chasing deer. As in past years, feral dogs killing deer on the refuge continues to be a problem; two deer carcasses were discovered surrounded by dog tracks. It is suspected that summer vacationers abandon their pets on the refuge before returning home.

# H. PUBLIC USE

## 1. General

Visitation for the year at Morton was 35,233. This reflects a 12% decrease from the estimated 40,000 visitors reported in 1986. A traffic counter was used this year for the first time in many years. The use of the counter has resulted in more accurate data and indicated substantially more winter visitation than previously thought. It is felt that the 1986 visitation figure was estimated too high and should have been closer to 1987's count.

In December, ORP Bell completed the handicapped accessibility evaluation of Morton. Besides finding that most of the public use facilities and employee facilities are not handicapped accessible, it was also found that the wheelchair accessible public toilet stalls were not sufficient either.



## 2. Outdoor Classrooms - Students

The estimated use of the refuge for environmental education was 676 students. This is a 35% increase from the 1986 estimate of 500 students. The increase is due in part to the observations of a former assistant refuge manager residing at Morton.

## 3. Outdoor Classrooms - Teachers

On May 16, Bell gave a teachers workshop at Morton and was assisted by Bob Kent, an Agent from the Cooperative Extension Association of Suffolk County. The information presented was three lesson plans from the Project Wild and two plans from the Cooperative Extension Association of Suffolk County. The workshop was attended by six teachers.

## 4. Interpretive Foot Trails

Nine guided walks were given to 86 people including a walk with participation by 12 members of the Nature Conservancy. SCAs conducted the bulk of these presentations.

## 6. Interpretive Exhibits/Demonstrations

The System-70 at Morton's unmanned contact station has been deteriorating over the years due to it being constantly moved for various offsite programs. The cost of replacement panels from the manufacturer is too prohibitive. An alternative was though to have been found. ORP Bell met with Sandy Gould of the Bellport High School Graphics/Arts Department. The high school agreed to replace damaged and deteriorated panels from our System-70 display as an art project for class. We had hoped to obtain high quality replacement panels for the cost of materials alone. However, after four months of waiting the damaged panels were returned in the same condition as they were when sent out. The explanation given was that the students couldn't be motivated to do the work. At the beginning of the project ORP Bell spent several hours with the student showing them around Morton to stimulate their participation.

The large map of Morton, located at the visitor contact station, was amended to illustrate the public use areas of the refuge that were closed due to nesting activity. Both the visitor center and visitor contact station were widely used by the public. These areas are utilized to inform the visitors of the reasons for closing Jessup Neck during the piping plover nesting season and provide other information about the refuge and refuge systems.



## 7. Other Interpretive Programs

Jessup Neck at Morton NWR was officially closed to the public April 1 to minimize disturbance to plovers and terns that traditionally use the Neck. The closed portions of the refuge were posted and a snow fence erected to encourage visitor cooperation and compliance. The assistance of our volunteer tern warden, Fred Zeller, has also been of help informing the public of the situation and educating visitors of the need to protect the shore birds.

## 9. Fishing

Surf fishing continues to be popular along the four miles of Morton's beaches. Bluefish and weakfish are caught during the spring season and bluefish are caught in the fall. .

## 14. Picnicking

Picnicking at Morton is neither encouraged nor discouraged. Most visitors use the area near the office under a pair of box elders to eat their lunches. No picnic tables are available but trash receptacles are provided.

## 16. Other Non-wildlife Oriented Recreation

The vast majority of summer visitors come to Morton solely to use the four miles of beach. This is one of the few non-permit beaches in the tourist area of eastern Long Island. With the listing of the piping plover as a federal threatened species, in 1986, tighter controls were necessary. Approximately 75% of Jessup Neck was closed in 1987 during the breeding season (April to August), leaving 400 yards of beach open for public use.

## 17. Law Enforcement

There has been continued trespassing into the closed area protected for tern and plover nesting. The trespassing is committed mostly from boaters landing on the beach, despite regulatory signs to the contrary.

Bay Constable John Anderson continues to patrol the refuge. Assistant Manager Casey patrolled the refuge on Memorial Day and July 4th to reduce trespassing by visitors in closed areas.



## I. EQUIPMENT AND FACILITIES

### 4. Equipment Utilization and Replacement

In February, a four wheel all terrain vehicle (ATV) was picked up at the factory in New Jersey. It is used on the beach to reduce wear and tear on the Jeep Scrambler and aid in beach patrol.

In March, some minor plumbing was done to the camper trailer, due to a burst water line from winter cold. It required replacing a three foot section of pipe under the tub. A new flexible solid waste line was run from the camper trailer to the septic tank.

A Sloan water valve diaphragm was replaced in the public restroom toilet.

In July, the hot water line to the camper trailer was severed when mowing the lawn. It required inserting a piece of copper pipe and two hose clamps to fix.

### 7. Energy Conservation

Energy conservation at Morton includes the following efforts: lowered thermostats, photo electric switches on security lights and the heat and lights turned off in the public restrooms during the winter months.

## J. OTHER ITEMS

### 3. Items of Interest

Refuge Supervisor George Gavutis visited the Long Island Refuge Complex on July 14 and 15. Mr. Gavutis visited Morton NWR on July 15 with Acting Refuge Manager Jasikoff.

On September 15, Refuge Manager Jasikoff met with Walt Quist, visiting ascertainment biologist from the Regional Office, and Tom Sperry, biologist from Ecological Services office in Brookhaven at Clam Island, to look into the feasibility of acquiring it and expanding Morton refuge's approved acquisition boundary to encompass the island.

### 4. Credits

This report was written by Donald Lima, edited by Ray Whittemore and Tom Jasikoff and word processed by Jane Striebel.



## OYSTER BAY NATIONAL WILDLIFE REFUGE

Oyster Bay, New York

Oyster Bay National Wildlife Refuge is located on the north shore of Long Island, ten miles west of Target Rock NWR. It is part of the Long Island National Wildlife Refuge Complex (LINWRC) and is administered through the main office at Wertheim NWR. The refuge is 3,204 acres in size, of which 78% is the bay bottom, 10% is marsh and 3% is unconsolidated shoreline.

The surrounding area is an affluent residential community. Several large pier structures are located on refuge property. Most were constructed prior to the establishment of the refuge, however, some illegal construction has occurred afterwards. Only occasional monitoring is performed due to limited staffing and budget.

The refuge is habitat for fish, crustaceans and is a major wintering area for waterfowl. Approximately 500 black ducks, 1,500 lesser scaup, 500 buffleheads and 100 Canada geese depend on the area for wintering habitat.

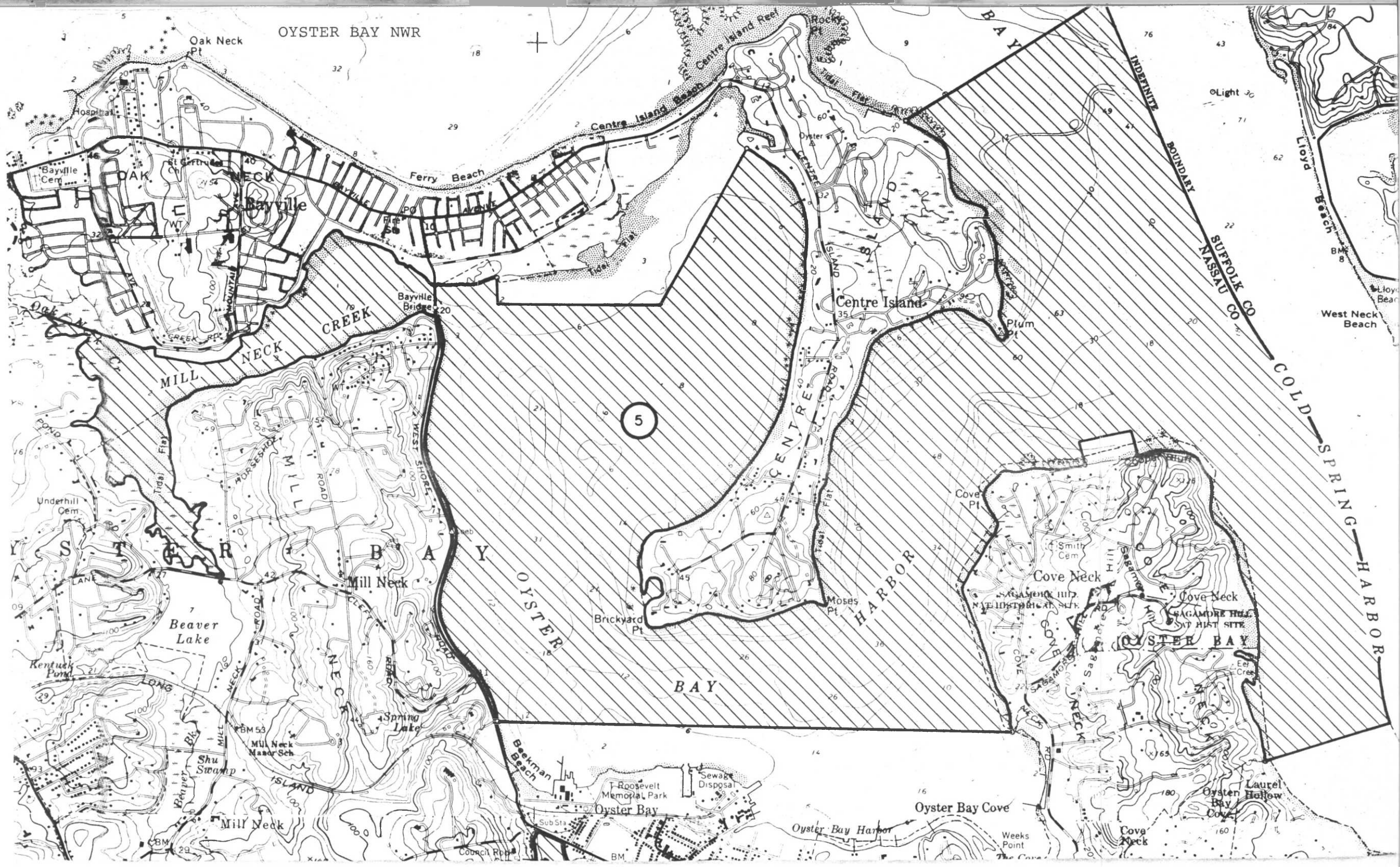
During the year a local Environmental Consultant, Roger Spoto, periodically surveyed the refuge for nesting osprey. His efforts paid off with the sighting of three osprey fledged from a platform nest in August.

The bay and surrounding waters have been occasionally visited by marine turtles. Current research by Okeanos Ocean Research Foundation has concluded that these waters play a more important role than previously thought as a developmental area for juvenile turtles. This makes the protection of this environment all the more important.

Public use regulations for inclusion in 50CFR were deleted entirely. Since the refuge is the bottom of the bay and is surrounded by many private and public use access points, there are no reasonable public use regulations that could be administered and enforced.

The town of Oyster Bay controls the water and since we do not own any adjacent land, this prevents us from managing the area to enhance it for wildlife.







SEATUCK NATIONAL WILDLIFE REFUGE

Islip, New York

ANNUAL NARRATIVE REPORT

Calendar Year 1987

U.S. Department of the Interior  
Fish and Wildlife Service  
NATIONAL WILDLIFE REFUGE SYSTEM



# SEATUCK NATIONAL WILDLIFE REFUGE

Suffolk County, New York

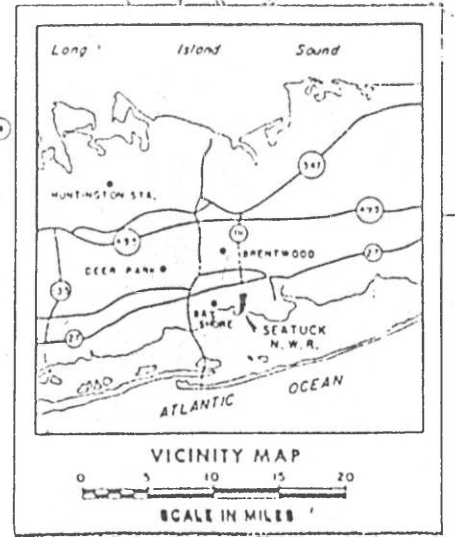
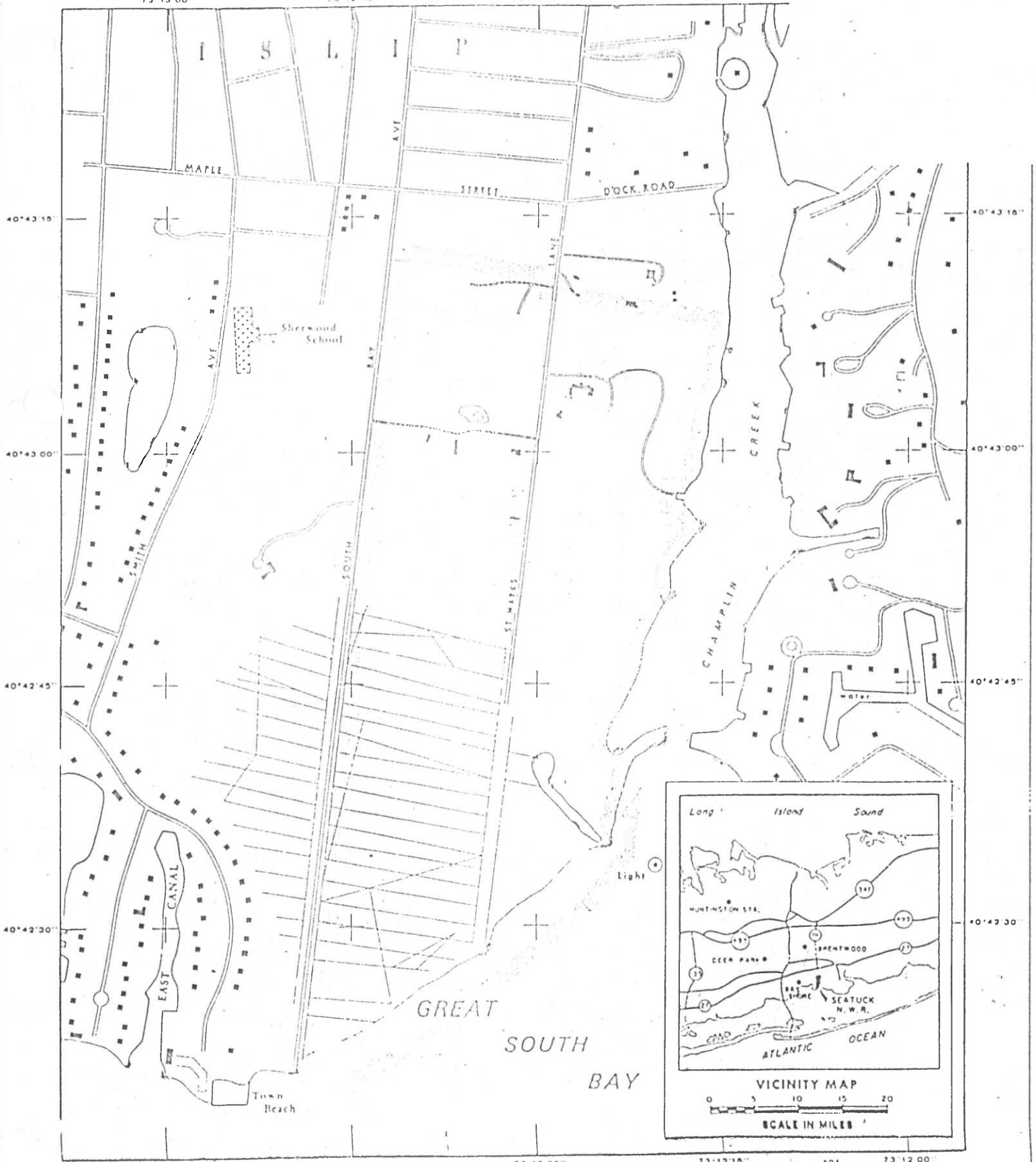
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DEPARTMENT OF THE INTERIOR

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COMPILED IN THE DIVISION OF ENGINEERING  
FROM SURVEYS BY O. S. AND F. A. W. S.

BOSTON, MASSACHUSETTS FEBRUARY 1973

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## INTRODUCTION

Seatuck National Wildlife Refuge is located in Islip, New York, on the south shore of Long Island. The 196 acre refuge borders on Great South Bay and consists of salt marsh, old field, brush, and woodland habitats. Even though the refuge is surrounded by suburban development, diverse populations of wildlife are present. Nesting osprey, large numbers of deer, shorebirds, waterfowl and songbirds occur here.

The refuge was acquired through a donation in 1968. A relative of the donor still has life estate privileges on a portion of the property and lives in a large home on the refuge.

The Seatuck Research Program, a cooperative program between the U.S. Fish and Wildlife Service, Cornell University Laboratory of Ornithology and the Webster-Peters Trust Fund is conducting an extensive research program on the refuge. The main emphasis is on managing refuges that are located in urban settings. Four full-time biologists, associated with Cornell University, are doing the research and are stationed on the refuge. Most of the information in this report is a result of their work.



#### A. HIGHLIGHTS

The Seatuck Research Program continues to operate, conducting various research studies (section D-5).

Deputy Regional Director Bill Ashe visited the Seatuck National Wildlife Refuge in December.

#### B. CLIMATIC CONDITIONS

Climatic conditions were similar to that reported in the Wertheim section of the Narrative Report.

#### C. LAND ACQUISITION

The possible transfer of the National Audubon's Scully Bird Sanctuary, located adjacent to Seatuck NWR, to the Fish and Wildlife Service was discussed during a meeting between Deputy Regional Director Bill Ashe, Refuge Managers Whittemore and Jasikoff and Seatuck Research Program Director Tom Litwin, in December.

#### D. PLANNING

##### 1. Master Plan

No action took place this year.

##### 4. Compliance with Environmental and Cultural Mandates

The final environmental assessment for white-tailed deer management at Seatuck National Wildlife Refuge was prepared in 1987 for Regional Office approval and release. The EA was prepared to satisfy National Environmental Policy Act (NEPA) requirements.

The present deer population at Seatuck greatly exceeds the recommended refuge carrying capacity of 19 deer. A public archery hunt was proposed as the preferred alternative to achieve the management goal. After much discussion, the Regional Office decided a public archery hunt would be too risky from a safety standpoint and too controversial, due to the small size of the refuge (196 acres) and the fact that it is surrounded by a suburban housing development.



Parts of the EA will be rewritten in 1988 to offer additional proposals.

#### 5. Research and Investigation

The Seatuck Research Program is a cooperative wildlife research project between the U.S. Fish and Wildlife Service and the Laboratory of Ornithology at Cornell University. The Seatuck Research Program is located on the Seatuck National Wildlife Refuge. The primary goal is to conduct studies involving the management of suburban wildlife and to assess the importance of wildlife refuges, like the Seatuck Refuge, in maintaining wildlife populations in suburban areas. In addition, because of the Seatuck Research Program's location on the south shore of Long Island, the program is also involved in studies of local coastal resources. Most of the activities outline in this report were conducted by the Seatuck Research Program.

#### Seatuck NR-87 "Suburban Deer Study" (52565-1)

The suburban deer study began as a pilot study in April, 1984, primarily as an investigation into the biological relationships between a refuge deer herd and its surrounding suburban environment. Since its commencement, the emphasis and direction of the study expanded and changed considerably as a result of information learned from telemetry data, management decisions and the link between deer ticks and the spread of Lyme disease.

The Seatuck Research Program is currently in the process of analyzing white-tailed deer movement data. Staffing remains at one full-time technician working under the direction of the following investigators: Dr. Thomas Gavin, Cornell University, Dr. Thomas Litwin, Seatuck Research Program, Cornell University, Dr. Mark Wilson, Harvard School of Public Health, Dr. Edward Bosler, NYS Department of Public Health, and Michael Wyand and Scott Wright, Northeast Center for Wildlife Disease, University of Connecticut.

Although all of the deer research is interrelated, the study evolved into three more or less distinct investigations:

1) habitat use, movements and activity patterns of white-tailed deer in a suburban environment, 2) deer-Lyme disease relationships on Seatuck NWR, and 3) the socioeconomic role of deer in suburbia. This study is unique in that it permits the evaluation of biological and sociological elements necessary for development of a comprehensive management plan for a suburban deer population. To the knowledge of the Seatuck staff, no study of this type has been reported for any large mammal found on a refuge that was totally surrounded by an urban area.



- 1) Habitat use, movements and activity patterns of white-tailed deer in a suburban environment.

Between April, 1984, and October, 1986, 4,137 radio locations were recorded for 29 radio-collared deer living on Seatuck National Wildlife Refuge and the surrounding suburban neighborhoods. Cover type maps based on land use, ecological attributes, and hydrology were developed for the approximately 3,500 acre study area. These three sets of maps are in the process of being digitized for analysis using a geographic information system (GIS). GIS allows creation and storage, in computer memory, of base maps of a study site. Spatially arranged information, such as songbird densities, deer locations, vegetation cover, or literally any other type of biological or physical data can also be stored in computer files. These data can then be overlain onto the base map much like using acetate overlays with traditional maps. This not only provides an easily accessible resource inventory, but also graphically documents wildlife habitat relationships for the purpose of resource planning and modeling. The system could manage and analyze data collected from other wildlife refuges and natural preserves on Long Island, as well as any number of additional such sites. To realize this potential a computer mapping and graphics system consisting of a digitizer, plotter, and other appropriate hardware and software will be required. In total, the proposed system will allow interfacing and merging of large data bases of various ecological parameters into a single, easily interpretable resource management product. The already computerized deer location data will be incorporated into the GIS and analyzed using special statistics along with standard statistical tests.

- 2) The role of the white-tailed deer in the transmission of Lyme disease.

Widespread concern over the spread and transmittal of Lyme disease prompted the initiation of this investigation in 1985. The deer tick is a vector of the spirochete causing Lyme disease. Deer and certain medium sized mammals are known hosts of the adult deer tick. However, the relative importance of the various mammalian hosts have not been systematically studied. Ticks, mice and other mammals all are important in the spread of Lyme disease to humans. As a larva, the tick picks up the disease bacterium from a mouse. As an adult, it attaches to medium or large sized mammals to feed, mate and reproduce.

This portion of the study was completed in 1986. Thus far two papers written by Seatuck Research staff based on deer



tick, ixodes dammini, data which was collected simultaneously with the deer movement data, are currently in draft form; one on the relative role of deer and medium sized mammals in the reproduction of the deer tick; and the other paper is concerned with the distribution of deer ticks as correlated with deer distribution and movements.

Sixty-three blood samples from deer captured on the Seatuck Refuge were tested for antibodies of the Lyme disease spirochete Borrelia burgdorferi during 1987. A summary report describing the results of these tests is being prepared by Dr. Edward Bosler of the New York State Department of Health.

### 3) The socioeconomic role of deer in suburbia.

This part of the interdisciplinary study was completed in 1985.

Seatuck NR-86 "Open Marsh Water Management (OMWM) on the Great South Bay, Long Island, New York" (52565-1)

In June, 1984, a comprehensive environmental monitoring program was begun on the salt marshes of the Seatuck National Wildlife Refuge by the Cornell Laboratory of Ornithology. Since that time, data has been collected on the numbers of mosquito larvae, plant distributions and biomass, fish populations, bird usage, insects and invertebrates, and marsh hydrology. Data has been collected on 18 study plots of one-quarter hectare in size, which were distributed throughout the 24 hectare marsh. 1987 represented the fourth and final year of this study.

The objectives of the study are as follows: 1) assess effectiveness of Open Marsh Water Management techniques in controlling mosquito production on the Seatuck salt marsh; 2) evaluate the environmental impacts of OMWM; 3) modify established OMWM methods to fit local salt marsh conditions and management objectives; and 4) evaluate OMWM techniques as long term, primary part of an integrated management approach to salt marsh mosquito control in Long Island's Great South Bay estuary.

Experimental management plots were altered between years two and three.

The plot alteration monitoring conducted in 1987 included the following:

1) Mosquito breeding - brood densities and frequencies of occurrence were monitored on the two alteration plots and two adjacent control plots (intensive).



2) Invertebrates - soil invertebrate communities in the marsh surface peat were systematically surveyed on a bi-monthly basis.

3) Vegetation - marsh vegetation was surveyed and mapped each season on the four intensive plots and the 12 extensive plots. Densities and biomass estimates were evaluated on the intensive plots.

4) Nutrients - nutrient levels were studied relative to tidal cycles in the intensive plots.

5) Fish - species abundance and distribution were surveyed throughout the marsh at ten locations each season.

6) Usage - resident (nesting) birds were surveyed over the entire marsh, and both migratory and resident bird use was monitored on the four intensive study plots.

Fish species were identified in seine samples collected in 1986 and 1987. The following species were collected: American eel, sheepshead minnow, mosquitofish, banded killifish, mummichog, lucy's killifish, striped killifish, pumpkinseed, tidewater silverside, golden shiner, striped mullet, ninespine stickleback, blue crab and grass shrimp.

All field data collection for this study was completed in 1987. The Seatuck researchers are in the process of analyzing the data collected over the past four years.

Investigators for the study are Dr. Thomas Hruby, from the Mass Audubon Society, and David Cowan, Dr. Thomas S. Litwin, and Richard A. Lent, all Seatuck scientists.

David Cowan resigned his position with Seatuck in September of 1987 to accept a position with a New Hampshire based environmental consultant firm. Mr. Cowan will continue to work on the project as a consultant.

Funding sources include Suffolk County Department of Health Services, New York State Department of Environmental Conservation, Division of Marine Resources, and New York Sea Grant Institute.

Seatuck NR-87, "Bird Habitat Relationships as a Guide to Ecologically Based Management (52565-3)

The final year of data collection (1987) for the study of bird habitat relationships which began at Floyd Bennett Field (FBF), part of the Gateway National Recreation Area in Brooklyn, New York, and has since been expanded to include



methodology that can be used to develop site specific management strategies for species of regional or local importance.

The objectives of the study are as follows: 1) collect baseline bird and vegetation data at the site for two seasons; 2) use these data to formulate management options; 3) monitor birds and habitat for two seasons following the recommended habitat alterations; 4) assess effects of habitat management. This study is a test case for development of an approach and methodology for analyzing the Seatuck/Scully breeding bird and habitat data in the context of island biogeography and landscape ecology theory. Results will be applied to the general problem of managing insular refuges in urbanizing environments.

Investigators of the study are Richard Lent and Tom Litwin, both of the SRP.

Since the conversion of old fields to grassland at Floyd Bennett Field in 1985, data has been collected on vegetative parameters, habitat variables and breeding bird populations. The data collected is now in the process of being analyzed and included in the geographical information system (GIS) for further comparison to other studies. Preliminary results show that the previous decline of the grasshopper sparrow and eastern meadowlark populations have stabilized with an increase in the population of the rufus-sided towhee and brown thrasher since habitat management practices were implemented

Seatuck NR-87 "Suburban Breeding Bird Survey" (52565-4)

A pilot study (1982) and three subsequent breeding seasons (1983 to 1985) of data collection have been completed. These data are awaiting analysis.

Seatuck NR-87 "Territory Acquisition, Habitat Quality and Site Tenure in Gray Catbirds" (52565-5)

The study of the gray catbird, the most abundant breeding songbird on Long Island, was completed this year.

The objectives of the study were as follows: 1) define habitat quality for catbirds using reproductive success as a criteria for "quality" vs. the traditional density approach; 2) determine specific habitat features that relate to reproductive success; 4) explore evolutionary aspects of habitat selection and morphology of catbirds.

Throughout the study period, 1983-1987, efforts have been made to locate as many active nests as possible in various



habitat types. Capture, banding and color marking of adults has continued and nest histories have been recorded using standard techniques. Nest site mapping has continued, and habitat variables have been measured using the nest as the center of the 1/10 hectare vegetative sample plot. After the young have left the nest some 40 variables of habitat structure and plant species composition around the nest are measured.



Young catbird after being banded.  
(Stk-87, Lent)

All the field data collected is presently being put into the computer and the GIS system for analysis using standard statistical tests and special statistics.

Investigators on this study are Seatuck Researchers Rich Lent, and Dr. Ronald Howard, Jr., of Purdue University.

Seatuck NR-87, "Nest Predation Study" (52565-6)

The nest predation study was initiated by Seatuck Research Program staff in 1982. The objectives of the study are to 1) quantify, using artificial nests, the extent of nest predation on Seatuck NWR and adjacent neighborhoods; 2) explore the relationships between habitat and nest success; 3) identify species of nest predators and determine their relative importance in nest predation.

Two years of data have been collected, computerized, and some preliminary analyses have been done. A detailed multivariate analysis of habitat data is planned, which will show how



specific habitat features relate to predation of the experimental nests.

This study will provide important corroborative data for two other Seatuck studies involving bird nests or nest predators, i.e., the catbird and raccoon studies. Results to date indicate the raccoon is indeed causing a large part of the predation on Seatuck.

This study is presently awaiting analysis through the GIS system with possible expansion into a more in-depth nest predation study.

Seatuck NR-87 "Raccoon Study" (52565-7)

A study entitled "The Ecology of the Raccoon (Procyon lotor) in the Suburban Long Island Environment", which began in 1985, was put on hold in 1986 due to funding problems, started up again in earnest this year, and is expected to be completed in 1988.

The Suburban Raccoon Study is funded through New York State Department of Environmental Conservation's Return a Gift to Wildlife Program.

Dr. Larry W. Van Druff is the principal investigator with Edward B. Bosler, Thomas S. Litwin and Susan M. Waid as co-investigators. Two research assistants were hired in April of 1987 and housed at Seatuck NWR. H. Peter Feigley will be conducting a live trapping and radio telemetry program to produce a PhD dissertation on the age-sex structure, movements, habitat usage, and human contact of the raccoon population. Laura L. Bigler will conduct parasite/disease sample collection and analysis while working towards a MS degree.

The study objectives are; 1) to determine raccoon population densities in the Islip, New York area; 2) to assess raccoon habitat use and preferences, and; 3) to evaluate the role of the raccoon as a vector and/or reservoir of communicable disease.

Population densities and individual movements will be assessed using capture-recapture techniques. Live traps will be continually monitored in various habitats found in the Islip area. All captured animals will be tagged before being released, and a small sample of the trapped raccoons will be radio collared. Tag returns, recapture data and radio locations will be used to estimate population size, home range and territorial behavior.





Raccoon being fitted with radio collar.  
(Stk-87, Feigley)

Accomplishments in this portion of the study include:

1) Live trapping -

A total of 66 live trap sites were located on the Seatuck NWR and 32 sites were selected in adjacent residential areas north of the refuge. Considerable time was expended by the researchers to acquire permission for access to private land and to establish a rapport with local residents, which is a very important aspect of working in the neighborhood.





Researcher H. Peter Fiegley records data  
on captured raccoons. (Stk-87, Van Druff)

Between April and December four trap periods were conducted with approximately 1,755 trap nights expended. Trap results are reported below.

Table 1: Number of raccoon captures per 100 trap nights

Period:	1	2	3	4
Captures/100 TN:	20.3	14.2	9.3	3.3

Researchers believe the decrease in capture success may be due to a distemper outbreak and subsequent population decrease, trap avoidance, or inactivity due to colder weather. Most likely the decrease is due to a combination of the three factors.

## 2) Radio Telemetry

A total of nine raccoons were radio collared during the first three quarters of the study. Seven of the collared raccoons were female and two were males, unfortunately four of the animals, three female and one male, died between October 1 and December 31. A total of 1,432 radio locations for the nine raccoons were recorded as of December 31. This includes daytime rest sites and nighttime tracking locations.





H. Peter Feigley tracking den sites for the ongoing raccoon study. (Stk-87, Van Druff)

Preliminary results indicate that chimneys are the most frequently used den sites in residential areas, while raccoons on the refuge frequently den in reed or catbrier.

All radio location data, as well as trapping data, will be integrated with habitat and vegetation structure data to produce habitat use/preference and home range records.

The evaluation of the role of the raccoon as a vector and/or reservoir of communicable diseases will be accomplished through the examination of live animals, analysis of carcasses from road kills, trapped or hunted animals donated by sportsmen, and euthanized specimens.





Researcher Laura Bigler removing ticks  
from anaesthetized raccoon.  
(Stk-87, Feigley)

Data being collected includes:

blood samples for virology analyses (analysis for rabies, canine distemper, feline panleucopenia, and canine adenovirus); blood samples for Lyme disease analysis; blood smears for analysis for blood protozoans and Lyme disease bacteria; blood samples for heartworm disease analysis; skin scrapings for mange mite identification; pelage combings for external parasite identification; fecal samples for internal parasite identification; ear swabs for ear mite identification; tick collections for analysis; urine samples for parasite identification and analysis for the Lyme disease bacteria.



A total of 134 raccoons have been processed during the first three quarters of the study. Samples collected depended on the age of the animal, time between interval of recapture, and sample availability. Physiological and parasite load data analysis will be conducted by Dr. Susan Wade, NYS Collage of Veterinary Medicine, Cornell University.

Preliminary results include:

Of 95 blood samples drawn for heartworm none were positive.

Of 2,539 ticks, which were hand picked from 195 raccoons, 1780 were the American dog tick (Dermacentor variabilis) 370 were the deer tick (Ixodes dammini) and 389 were the raccoon tick (Ixodes texanus).

Aerial photographs of the study area were obtained and a map of the study area is in the process of being prepared.

Activities conducted throughout 1987 are planned to continue throughout 1988.

Seatuck NR-87, "Least Tern Productivity Study" (52565-8)

The lest tern productivity study completed its third and final year of data collection this past summer. Similar to last year, data was collected on factors affecting colony site selection, Movement of adults during the breeding season, nesting success and post season dispersal of adults and young. In addition, an examination of nest site characteristics is being conducted. This season, 1,642 nests were monitored; 203 adults and 387 young lest terns were banded in 15 study colonies. Sixty-eight adults were recaptured this year. All 1987 tern data has been entered into computer files and are currently being edited in preparation for production of the final report.





Adult least tern showing off its new color bands.  
(Stk-87, Peterson)

Preliminary results show least tern colony success on Long Island varies considerably from one site to another, and from one year to another, due to the dynamic nature of their nesting habitat. Results also suggest that human disturbance and predation are by far the most important factors affecting nesting success on Long Island.

Staff for the 1987 field season consisted of one full-time biologist, two full-time technicians, and one full-time student intern.

The study is funded by NY DEC's Return a Gift to Wildlife Program; Moriches Bay and Great South Bay Audubon Societies; U.S. Fish and Wildlife Service; and Seatuck research support.

#### Seatuck NR-87 "Box Turtle Study" (52565-9)

No new box turtle data was collected in 1987. Data from 1982-1985 is awaiting analysis.

#### Seatuck NR-87, "Piping Plover Study" (52565-10)

Since 1983, the New York DEC and Seatuck Research Program have been monitoring the Long Island piping plover population (which represents 20% of the U.S. Atlantic coast population) through the Long Island Colonial Waterbird Survey. In 1986 the piping plover was listed by the federal government as an



endangered species in the great lakes region of the United States and Canada. It was also listed as a threatened species along the Atlantic coast. The Long Island population was estimated at 105 pair in 1986, a decline of 79% since Wilcox's (1959) estimate of 500 pair.



Male piping plover at nest.  
(Stk-87, Elliott)

The Seatuck Research Program initialed a pilot study to obtain baseline data on piping plover reproduction on a 23 mile stretch of barrier beach between Merox Bay, Southampton, NY, and Moriches Inlet, Brookhaven, NY. The study and the study area was established to coincide with the data collected through the Long Island colonial waterbird and piping plover survey (1983-87) and the 20 year band study by Leroy Wilcox.

The pilot study objectives were: 1) to establish the study, area 2) locate and mark all piping plover nests, 3) monitor each nest to collect data on clutch size, incubation period, hatching success, chick survival, nest density, nest dispersion, and nest failure/abandonment, 4) identify the factors affecting reproductive success such as predation, human disturbance and meteorological events, 5) determine the nesting chronology (arrival on breeding grounds, egg laying, hatching, fledging, departure, etc.) of piping plovers on Long Island, 6) and compare population figures and reproductive success of piping plovers with annual Long Island colonial waterbird survey results.



The principal investigator is Dr. Thomas S. Litwin. Dave Maclean, Seatuck biologist, supervised the field work, and Jennifer Gossfeld, biological technician, conducted the field work.

The study was funded by the New York Department of Environmental Conservation using U.S. Fish and Wildlife endangered species funds.

Field work began the last week in April and was completed the second week in August. Fifty-four nests were located by walking the study area and searching for piping plover or plover tracks. Plover track were followed and plovers sighted were observed until the nest site was located.



Jennifer Gossfeld, piping plover field technician searching for nest.  
(Stk-87, Litwin)

Each nest was marked using natural beach materials placed approximately 50 feet from the nest. Nests were monitored 2 - 3 times per week using binoculars or a spotting scope to minimize disturbance to the nest. Biological data was collected throughout the breeding, incubation, and chick rearing process, or until the nest was abandoned. Factors affecting piping plover reproductive success such as predation, human disturbance, meteorological events, etc., were also recorded for each visit.





Destruction of piping plover habitat can lead  
to destruction of human habitat.  
(Stk-87, Litwin)

All data was entered into computer files for editing and analysis. The final report is scheduled for completion in April of 1988.

#### Preliminary Results

##### Nest chronology:

- Piping plovers arrive at breeding ground on Long Island in mid to late April.
- Nest initiation begins the first week in May.
- Piping plover observation ended by August 8.

The average clutch size was 3.7 per nest.

The average incubation period was 28-30 days.

Thirty three nests of the fifty four had some type of hatching success which resulted in an overall hatching success rate of 43%. The remaining 21 nests failed due to the following reasons:

mammal predation	5
avian predation	5
high tide	1
human disturbance	2
abandonment	2
unknown	6



Results relating to nest density and dispersion are awaiting the completion of a more detailed map of the study area.

All data and results of this pilot study of piping plover reproduction on Long Island will be used for the 1988 piping plover study on Long Island by Dr. Charles Smith, and a PhD candidate from Cornell University.

## E. ADMINISTRATION

### 1. Personnel

There are no permanent refuge staff stationed at the Seatuck refuge. Four full-time employees of Cornell University form the nucleus of the Seatuck Research Program. The director is Dr. Tom Litwin and the biologists are Rich Lent, Ann Ducey, and Dave Maclean. Dave Cowan resigned his position as a Seatuck biologist to accept a position with a New Hampshire based environmental firm. Patricia Dolly is a part-time office manager. Four seasonal technicians were also employed this year and assigned to various Seatuck research projects; they were Richard Bachand - marsh study, Dee Casey - catbird study, Karen Combs - least tern study, and Jennifer Gossfeld - piping plover study. Don Lima was hired as a maintenance worker for part of the summer. Jennifer Gossfeld and Karen Combs were provided housing at the Wellington dormitory at Wertheim NWR.

### 3. Other

An intern program was established in 1983 by Cornell's Laboratory of Ornithology and the Seatuck Research Program to provide college level students with exposure to field oriented avian research while assisting with SRP projects. Successful applicants are provided free housing, utility support and a stipend for a ten-week period.

SRP sponsored two interns during 1987. They were Raissa Gebhart (catbird and marsh studies) and Mike Fishman (tern project).

Two Syracuse graduate students working on the raccoon project, H. Peter Feigley and Laura Bigler, are stationed and housed at Seatuck.





Seatuck Staff (Stk-87, Litwin)

Top row-(l-r): Anne Ducey, Carol Shaw, Richard Bachand

Middle-(l-r): H. Peter Feigley, Karen Combs,  
Jennifer Gossfeld, Laura Bigler,  
Dee Casey, Dr. Larry W. Van Druff,  
Patricia Dolly;

Bottom-(l-r): Raissa Gebhart, Charles Webster (Seatuck  
donor), Dave Cowan, Dave Maclean, Rich Lent,  
Tom Litwin.



## 5. Funding

There are no separate funds for Seatuck NWR. Funds to operate this station come out of the Wertheim budget. The research program is funded by a private trust and Cornell University. Individual research studies are funded in a variety of way and by various organizations.

## 6. Safety

No accidents occurred through the year, however, Tally Lent (wife of SRP biologist Rich Lent) contracted Lyme disease again this year.

## 7. Technical Assistance

Both the Long Island Refuge Complex Manager and the Refuge Supervisor serve on the Seatuck Research Program advisory board. The board meets regularly to review the progress of research studies and make research recommendations as well as review budget and overall operating plans.

# F. HABITAT MANAGEMENT

## 1. General

Baseline habitat and vegetation data were collected throughout the year in support of the ecosystem/ecologically based research being conducted at Seatuck.

## 2. Wetlands

Open Marsh Water Management (OMWM) program continued on the test portion of the Seatuck marsh. Plans for expansion of OMWM to the remainder of the Seatuck marsh were developed this year, for implementation in 1988.

## 9. Fire Management

A cooperative agreement between the Town of Islip and the refuge was maintained during 1987. The town fire department has agreed to respond to any fire reported on the refuge. No fires occurred on the refuge during 1987.

## 10. Pest Control

Mosquito control for the residential areas surrounding Seatuck refuge has been a major refuge issue. In the past, the issue has attracted media and congressional attention. The Seatuck Research Program, refuge staff, and Suffolk County Vector Control have worked together to solve the



mosquito problem at the same time protect the marshes and wildlife.

Throughout the 1987 mosquito breeding season, numbers of mosquito larvae were monitored on a weekly basis. Results of weekly mosquito monitoring were reported to Dr. Guirgis of Suffolk County Vector Control (SCVC). Monitoring consists of larval sampling within specified areas as designated by SCVC, in addition to frequent, extensive sampling, being done throughout the marsh in connection with the Seatuck OMWM project.

A special use permit was issued to Suffolk County Vector Control for the application of BTI on Seatuck refuge in March. In response to major mosquito hatches during 1986, SCVC applied BTI from a helicopter to the refuge six times. BTI is a bacterial agent that kills larvae without the residual effects of chemical pesticides. BTI was also applied manually to breeding "hot spots" in the marsh.

Problems with neighborhood dogs chasing and killing deer on the refuge continues and possibly increased this year. Openings in the fence, surrounding the refuge, made by local kids allow the dogs access to the refuge. Several verbal warnings as well as attempts to capture the dogs have proven unsuccessful.

## G. WILDLIFE

### 2. Endangered and/or Threatened Species

The osprey is listed as a threatened species in New York, by NYS DEC. During 1982, the Seatuck Research Program initiated an osprey restoration project and erected four nest platforms. This year represented the fifth consecutive year osprey have successfully nested on Seatuck. Also, initiated this year was a pilot study on the federally threatened piping plover (see section D.5, study 52565-10)

### 3. Waterfowl

The SRP continued to maintain the captive native North American waterfowl collection during the year in the new waterfowl pens constructed at Seatuck in 1985.

The collection is restricted to the waterfowl of the Atlantic Flyway and is being maintained as an educational tool. During 1987, the collection was used by decoy carvers, artists and members of the South Shore Waterfowlers Association for a program on waterfowl identification.



A local aviculturist, John W. Taylor collected eggs laid by the captive waterfowl. Sixty-four eggs were collected; of them, 18 wood duck, eight red head, and five pintail hatched and survived. All ducks produced are used for replacement and for other collections.

Waterfowl Inventory - December 1987

<u>Species</u>	<u>Male</u>	<u>Female</u>
Blue-winged teal	2	2
Bufflehead	0	1
Canvasback	5	5
Gadwall	1	1
Green-winged teal	3	2
Common Goldeneye	1	1
Hooded Merganser	1	1
Northern shoveler	1	1
American pintail	1	1
Ruddy Duck	0	2
Ringed neck duck	1	1
Greater Scaup	1	1
Lesser Scaup	1	1
Wood Duck	2	2
Red head	1	1
Black duck	1	0
American widgeon	1	1
American merganser	<u>1</u>	<u>1</u>
Totals	24	25



Captive waterfowl collection at Seatuck.  
(Stk-87, Casey)



## 5. Shorebirds, Gulls, Terns, and Allied Species

In 1983 three species of terns (common, least and roseate) and the piping plover were officially listed as endangered or threatened in the State of New York. The Long Island Colonial Waterbird Association was formed by the Seatuck Research Program in conjunction with the Long Island Audubon Council, Long Island Chapters of the Nature Conservancy, NYS DEC, Federation of New York State Bird Clubs and the National Audubon Society, in response to these threats. The goals of the Association are to ensure the future of all species of colonially nesting waterbirds on Long Island, and to bring about the full recovery of any colonial waterbird listed under the New York State endangered species law.

The Seatuck Research Program Colonial Waterbird and Piping Plover Survey conducted in cooperation with the New York State DEC has proven to be instrumental in the development of a Long Island-wide monitoring and conservation program and a major activity of the Association.

This year marked the third and final year of the Long Island Colonial Waterbird and Piping Plover Survey. Staff for the 1987 field season consisted of one full-time biologist, two full-time technicians, and one full-time student intern. Participation of volunteers continued to be considerable with approximately 75 observers assisting SRP and NYS DEC staff.

Data from the 1987 survey have all been entered into computer files. A 1987 Colonial Waterbird Management Report is scheduled for publication in January 1988. Previous reports have been distributed to the U.S. Fish and Wildlife Service, New York State, Department of State, U.S. Army Corps of Engineers (NY district), Canadian National Park Service, Piping plover recovery team, Monomet Bird Observatory, The Nature Conservancy, national and local Audubon Societies, and many other environmentally oriented agencies.

## 6. Raptors

Screech owls were known to have nested on the refuge in 1987.

## 7. Other Migratory Birds

Approximately 35 blue bird/swallow boxes were monitored this season by The South Bay Audubon Society. Swallows and wrens used the boxes, but no blue bird nesting was reported.

A purple martin nest box erected last year was not used this year.



## 8. Game Mammals

The deer herd at Seatuck NWR increased in size from an estimated 35 deer in 1985 to an estimated 46 in 1986. There was no documented estimate for 1987. The carrying capacity for the refuge was determined to be 19.5 deer by Dr. A. N. Moen, Professor of Wildlife Biology, Cornell University, NY, during the year, using Deer Camp a populations-habitat computer model for determining wildlife carrying capacities. The procedure is based upon land use data, which in the case of Seatuck was derived from the habitat classification and cover type mapping for the Long Island NWR Complex. The present population greatly exceeds the refuge carrying capacity! Observation by refuge staff, New York State wildlife biologists and SRP staff concur there is over-utilization of the habitat demonstrated by the obvious browse line (3-4 feet above surface) evident throughout the refuge.

The refuge is bounded on two sides by water and in 1985 a fence was installed on the remaining two sides. The combination of the water and fence barriers have greatly restricted the movement of the deer on and off the refuge and has increased the urgency for reducing the herd. A draft EA proposing a public archery hunt was prepared in 1986, but was rejected by the Regional Office because of safety concerns and the controversial nature of the hunt.

## H. PUBLIC USE

### 1. General

Seatuck is not open to the public primarily due to the operation of the Seatuck Research Program (SRP). Interpretive and educational activities are sponsored and conducted by SRP staff for various groups upon request.

During 1987 many public contacts and programs were conducted by SRP staff related to their ongoing studies.

### 2. Outdoor Classrooms - Teachers

A very productive education oriented relationship has developed with Suffolk County Cooperative Extension Service. The Cooperative Extension Service is a New York State program based at Cornell University, with county level programs statewide. They have developed high quality programs and teaching materials regarding bird study and natural resource management. Using the SRP and the Seatuck refuge as a backdrop, Cooperative Extension Service has held a number of successful programs on the refuge. This serves to promote



conservation education while satisfying the public interest in the activities of the Service, Cooperative Extension and the SRP.

This year a Master Birder program was sponsored. The program was held at Seatuck for 13 consecutive weeks for the purpose of training interested individuals on how to educate others in the areas of birding and field ornithology.

Seatuck Research Biologist Ann Ducey conducted environmental educational walks for 4th, 5th, and 6th graders from Hewlett Grade School, Islip, NY.

#### 11. Wildlife Observation

Members of the South Shore Waterfowlers Association conducted many bird walks and visited the captive waterfowl flock at Seatuck during the year.

#### 20. Other Programs

Members of the Great South Bay Audubon Society used and had access to the library at Seatuck throughout the year.

### I. EQUIPMENT AND FACILITIES

#### 1. New Construction

A dog kennel was converted into a fieldwork staging laboratory for collection of data for the ongoing raccoon study. The entire project was funded by the SRP.

#### 2. Rehabilitation

The chain link fence along South Bay Avenue was vandalized several times this year requiring minor repair.

### J. OTHER ITEMS

#### 1. Cooperative Programs

The Seatuck Research Program is a cooperative program between Cornell University Laboratory of Ornithology, U.S. Fish and Wildlife Service and the Natalie Peters Webster Trust Fund. The purpose is to develop management techniques for urban insular refuges. Funds are provided by the Trust Fund, the facilities are provided by the Service and the lab provides personnel and operations.



#### 4. Credits

The Seatuck narrative was written by Paul Casey and edited by Ray Whittemore.



TARGET ROCK NATIONAL WILDLIFE REFUGE

Huntington, New York

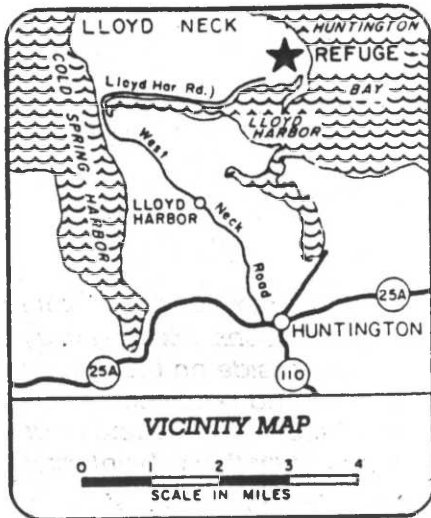
ANNUAL NARRATIVE REPORT

Calendar Year 1987

U.S. Department of the Interior  
Fish and Wildlife Service  
NATIONAL WILDLIFE REFUGE SYSTEM



# TARGET ROCK NATIONAL WILDLIFE REFUGE LONG ISLAND, NEW YORK



## POINTS OF INTEREST

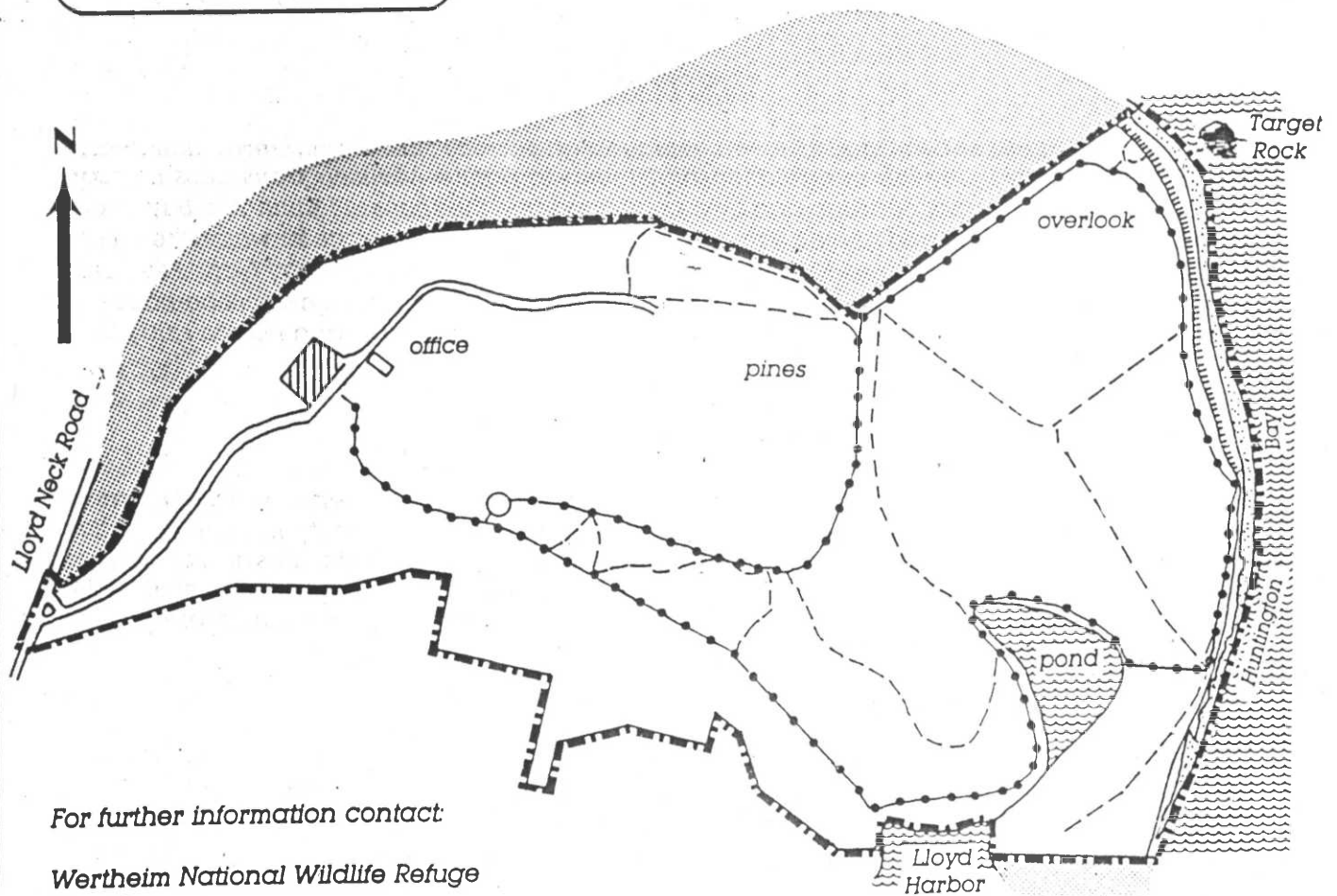
Target Rock  
Old formal gardens  
Huntington Bay overlook  
Beach and tidal life  
Nature trail

## ACTIVITIES

Environmental Education  
Wildlife Photography  
Hiking  
Nature study  
Bird watching

## LEGEND

- Nature Trail
- Other Trails
- Private Land
- Refuge Boundary
- Beach
- Edge of Bluff
- Parking and Restrooms



For further information contact:

Wertheim National Wildlife Refuge  
Box 21

Shirley, New York 11967

Telephone: (516) 286-0485

March 1987



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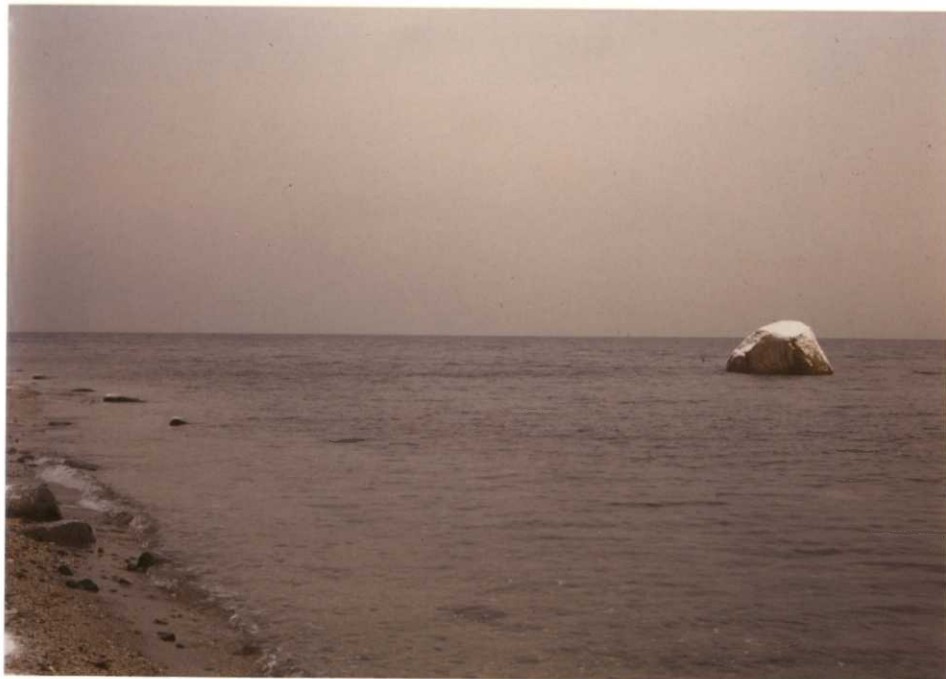
L. INFORMATION PACKET (inside back cover)



## INTRODUCTION

The 80-acre Target Rock National Wildlife Refuge is located on the north shore of Long Island, about 40 miles east of New York City. Although small in size, the refuge has a variety of habitats including old fields, salt marsh, a brackish pond, oak-hickory forest, shoreline along Long Island Sound, and old formal gardens. Many visitors to the refuge consider it a special place to escape from the hustle and bustle of metropolitan New York.

The refuge was established through a donation in 1967 and takes its name from a large rock located in Huntington Bay. The rock was reportedly used as a target by British war ships during the Revolutionary War.



Target Rock (Tgr-87, Unknown)



#### A. HIGHLIGHTS

After many inventories and years of waiting, personal property of little or no value, from the Eberstadt Mansion at Target Rock Refuge, was destroyed by refuge staff and other property was auctioned (section D.4).

Blue-winged warblers, new to Target Rock, have been confirmed breeding here (section G.7).

#### B. CLIMATIC CONDITIONS

No weather data was taken for this refuge. However, two snow storms hit the Long Island Refuge Complex (LIRC) on 1/23 and 1/26, with accumulated totals of 10" and 12", respectively.

#### D. PLANNING

##### 2. Management Plan

On December 8, Managers Whittemore and Jasikoff met with Deputy Regional Director Bill Ashe. Among the topics of discussion was the Target Rock NWR land transfer potential. After all alternatives are explored a decision will be made as to the fate of this station.

The Hawk Hill Property Owners Association and the Seacrest Homeowners Association approached the village of Lloyd Harbor again requesting they assume responsibility for the right-of-way that leads to the refuge. The refuge is party to a cooperative agreement with the above two associations and therefore pays for one third of the annual maintenance costs for sanding, plowing, etc. On average, the government spends about \$1000 yearly, under this agreement. Because the right-of-way is considered a private road, the village chooses not to assume maintenance responsibilities. Several attempts in the past 15 years have been made by co-op partners to divest themselves of this road through dedication to the village, but as of yet, they have failed to accept it. Because public use of this right-of-way has increased ten fold over the past eight years (35,800 in 1987) we hope to convince the village that, in this case at least, this road is no longer "private", as it is open to the general public for the purpose of visiting the refuge. Perhaps, this time they will agree with our reasoning.



#### 4. Compliance with Environmental and Cultural Resources Mandates

On June 17 and 24, refuge staff located and disposed of items marked for disposal from the mansion. With the exception of a few items salvageable for use in the Wellington dorm, all items were destroyed and taken to the dump. During the first day, the Law Enforcement division from Lawrence, NY, destroyed thousands of dollars worth of confiscated animal products. This was accomplished by burning.

Personal property items remaining from the Eberstadt Estate at Target Rock were auctioned off at the refuge in November. All of the items were made available for public inspection prior to the sale. Staff from the General Services Administration conducted the auction. Receipts from the sale totalled \$4,300. Removal of the personal property was arranged by appointment and completed a few weeks later.



Old belt driven log saw, is just one of the items auctioned off by GSA to dispose of property belonging to the former Eberstadt Estate. (Tgr-87, Bell)

#### 5. Research and Investigations

Jeff Dorwart, Associate Professor at Rutgers University, inspected books and personal correspondence of Ferdinand Eberstadt, remaining in the former library of Mr. Eberstadt in the mansion, to ascertain their scholarly value. Dr. Dorwart has thoroughly researched the life of Mr. Eberstadt



and is in the process of writing a book about him. The refuge facilitated a property transfer of a box of books inspected by and of interest to Dr. Dorwat for ultimate deposition with the remainder of Mr. Eberstadt's personal library at Princeton University. SCA volunteer Lois Henry assisted Dr. Dorwat with the inspection.

#### 6. Other

During the year several meetings were held regarding the possible leasing of the mansion by an outside organization.

In March, Manager Spaulding met with Shirley Kneety, President of Queens College, Lola Locker and Paul Stief, both Queens College attorneys, Phillip White and Peter Schmidt, Director and Assistant Director of Queens College Environmental Program, to tour the mansion and discuss the possibility of Queens College assuming management responsibility for Target Rock NWR. This is the third time such a meeting has taken place with interest at Queens College finally reaching the President. Unfortunately, the severe vandalism incident which occurred in 1986 resulted in additional repair costs to the building before any permanent use can be made of it.

In September, Acting Refuge Manager Jasikoff met with officials of the Helen Keller Society who were interested in using /renovating the Target Rock mansion for conducting their business.

Mr. Nick Savoca, Director of the New York branch of Youth With A Mission, had expressed an interest in rehabilitating and utilizing the Target Rock Mansion as their headquarters/office. A written proposal was prepared by Youth With A Mission and sent to the Regional Office for review and consideration.

The Youth With A Mission is an international interdenominational missionary organization that provides mobile emergency relief, medical aid, technical assistance, food, clothing and spiritual help to needy areas of the world. Through volunteer participation, the organization maintains and operates two sea-going vessels and has renovated numerous mansions and castles throughout Europe to facilitate their mission and to conduct their commendable work. Progress was halted when it was decided at the Regional level not to commit the use of the building to an outside group until the disposition of the refuge itself had been determined.



## E. ADMINISTRATION

### 1. Personnel

Refuge staff currently residing at Target Rock include Manager Whittemore and Maintenance Man Marto. The office is manned periodically throughout the year, especially during spring and summer, to conduct necessary maintenance, law enforcement and to aid the public.

In 1987, six volunteers contributed 116 hours and one SCA lived and worked on site for 12 weeks. They were engaged in various activities including trail maintenance and construction, patrolling, trash pickup, guided walks, cleaning restrooms, maintaining brochure supplies in the kiosk, wildlife habitat management, public use record keeping, development of a "YOU ARE HERE" map for the kiosk and bird surveys. Lois Henry, the first SCA to be stationed at Target Rock, did a good job. Among other accomplishments, she produced an excellent guide on how to give a guided walk. This guide has been incorporated into the volunteer training.

Boy Scouts from Troop 8 provided 232 hours of volunteer labor on two major projects. These projects are discussed in I.3.

## F. HABITAT MANAGEMENT

### 1. General

There are 23 cover types within this 87 acre refuge. Included is a one acre field located between the two refuge residences. This diverse cover type attracts a variety of wildlife and produces an abundance of diverse plant life.

### 2. Wetlands

ORP Bell met with Seatuck Research Program Biologist Dave Cowan and volunteers Barbara Roux, and son Mike, at Target Rock to discuss excavating two wet spots on the refuge to improve wetland habitat. No further action was taken during the year.

### 5. Grasslands

The one acre field at Target Rock was treated with Damminix, a new insecticide developed to reduce the deer tick population. The insecticide is applied to cotton which is placed in a cardboard tube container and then placed in deer mouse habitat. The mice collect the treated cotton for nest material which eliminates any tick larvae that the mice may be carrying.



## 6. Other Habitats

Again this year, the New York Botanical Society removed some of the exotic species in the old formal gardens of the Eberstadt estate. They were transplanted in the Cary Arboretum for propagation.

## G. WILDLIFE

### 1. Wildlife Diversity

The diversity of the wildlife found at Target Rock provides excellent opportunities for observation. Species include upland mammals, songbirds, waterfowl, marsh birds and marine life.

### 2. Endangered and/or Threatened Species

The piping plover is an occasional visitor to the refuge. Also observed here is the harrier and common tern. New York State lists the harrier and tern on their threatened list. None of these birds are known to nest here.

The prickly pear cactus, on New York's protected list, is also found on the refuge. Though no study has been done, the population appears to be stable.

### 7. Other Migratory Birds

The bluffs on the refuge are used by bank swallows for nesting. Suitable nesting sites are on the decline on Long Island due to erosion control measures and construction. This is readily apparent from viewing the construction that occurred adjacent to the refuge. The loss of these bluffs has resulted in a decrease in local populations of bank swallows. However, the refuge's population has remained intact and adults have been observed inspecting cavities during May.

Blue-winged warblers have also been confirmed as breeding at Target Rock refuge by Seatuck researcher Dave Cowan. Previously, blue-wings were not reported as a breeder at Target Rock.

Refuge Manager Ray Whittemore participated in the Christmas bird count on December 26 on the north shore, by covering Target Rock refuge and Lloyd Neck. Waterfowl observed on the north shore included white-winged and common scoter, red-breasted merganser, goldeneye, bufflehead, scaup and black ducks.



## 9. Marine Mammals

Recent research conducted by the Okeanos Ocean Research Foundation indicates that the Long Island Sound and surrounding bays play a more important role for juvenile marine turtle as developmental habitat than previously thought. This places an increased importance on the refuge's bay shoreline as protected habitat.

## 15. Animal Control

During the past few years, there has been an increase in the number of incidents of roaming dogs and cats on the refuge. This year, the number of incidents seemed to stabilize. This is probably due to continued contact with nearby home owners.

# H. PUBLIC USE

## 1. General

Visitation for 1987 was estimated to be about 35,800. This is approximately 43% higher than last years estimate. The increase was attributed to the use of a traffic counter, and observations to estimate the number of people per car. The end result was that substantially more people were visiting the refuge, particularly during the winter, than previously thought.

A Handicapped Accessibility Evaluation was conducted in December. It was determined that the vast majority of public and employee facilities and refuge trails are not handicapped accessible.

The parking lot at Target Rock was filled to capacity, and at times overfull, during the summer. Thousands of visitors flock to Target Rock in May to bird and view the spectacular blooms of azalea and rhododendron along the nature trail that winds through the old formal gardens.

## 2. Outdoor Classrooms - Students

During the year an estimated 725 students visited the refuge to conduct environmental education programs.

## 4. Interpretive Foot Trails

Volunteer Fred Galow, completed a draft of a "YOU ARE HERE" map which will be installed in the kiosk at Target Rock. At the year's end, the mock-up from the regional office's graphics department had been reviewed by us and sent back to the regional office for final changes and construction by the



contractor. We expect delivery and installation during the spring of 1988.

The Target Rock general flyer was revised this year, with the assistance of volunteer Marilyn Grace. A number of "trails" were eliminated from the map, in an effort to curb the use of undesignated pathways.

#### 9. Fishing

Approximately 254 fishermen fished at Target Rock this year. Species most commonly caught here are striped bass, blue fish, weak fish, sand shark, black fish, flounder, porgies and occasionally mackerel.

#### 11. Wildlife Observations

The number of wildlife observers was estimated at 14,650. An observation blind is located adjacent to a brackish pond and many visitors take advantage of this to quietly view and photograph wildlife.

#### 14. Picnicking

Though no picnicking facilities exist, there was an estimated 1,170 picnickers. This is not a recognized activity at the refuge, however, it is permitted as it does not conflict with the refuge's management.

#### 16. Other Non-wildlife Oriented Recreation

Occasionally, visitors will use the refuge's beach to sunbathe or swim. Although these are not encouraged activities, they are permitted.

#### 17. Law Enforcement

The Eberstadt mansion was broken into at least six times this year. The usual vandalism occurred including the breaking of windows. The library was ransacked and a fire started in a bathroom sink. Stored items, confiscated by Special Agents, were transferred from the mansion to a more secure building on the refuge.

The Lloyd Harbor Police Department notified the refuge that a visitor had found and turned over to them a .25 caliber automatic pistol. The circumstances of its disposition on the Target Rock beach is under investigation by the Suffolk County P.D. To date, the outcome of the investigation is unknown.



## I. EQUIPMENT AND FACILITIES

### 1. New Construction

A pole gate was installed across the main entrance road to prevent visitors from driving down to the mansion or beach.

Water softening and purifying systems were installed by a contractor in both residences.

### 3. Major Maintenance

Exterior scraping, painting and caulking of the walls and windows at the quarters and office complex started on July 20 and was completed by September. The work was done by volunteers from Boy Scout Troop 8, East Northport, NY. It took them 160 hours to do the work.



Office maintenance. (Tgr-87, Jasikoff)

The bluff overlook was rehabed to provide a better, and safer, viewing site. Boy Scout Troop 8 donated 72 hours to this project.

The interior of Q-7 was partially renovated prior to the arrival of Refuge Manager Whittemore and family. Work included putting up new sheetrock, spackling, sanding and painting the walls. All the hardwood floors were cleaned and



waxed. A new stove, refrigerator, screen doors, interior window shutters and storm doors were installed. The entire staff assisted with the job.



Q-6 deck. (Tgr-87, Jasikoff)

A new 16' x 16' deck was constructed in back of Q-6.

#### 7. Energy Conservation

All active oil burners were professionally cleaned this year to increase efficiency. Also, heat to the unoccupied half of the office building was turned off to reduce energy costs.

### J. OTHER ITEMS

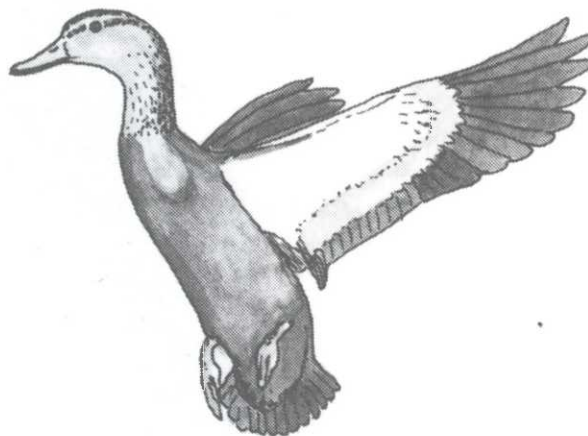
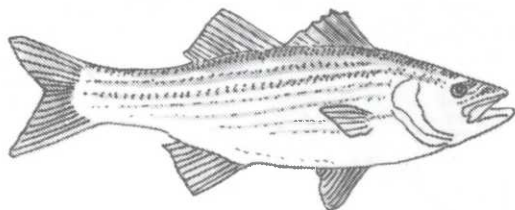
#### 4. Credits

This report was written by Jim Bell, edited by Ray Whittemore and word processed by Jane Striebel.



# THE NATIONAL WILDLIFE REFUGE SYSTEM

Wertheim is one of over 400 units encompassing more than 90 million acres in the National Wildlife Refuge System, administered by the U.S. Fish and Wildlife Service. The Service also manages more than 70 National Fish Hatcheries and major fish and wildlife research laboratories across the country. As the Nation's primary steward of fish and wildlife resources, the Service provides leadership in habitat and wetlands protection, fish and wildlife research and technical assistance, and conservation and protection of migratory birds, anadromous fishes, certain marine mammals, and threatened and endangered species.

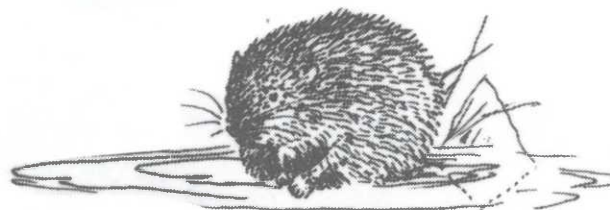


## WERTHEIM National Wildlife Refuge

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE



September 1985  
RL 52561-1



Shirley, New York



## WELCOME

The Wertheim National Wildlife Refuge protects 2,400 acres of land and water on the south shore of Long Island, New York. Oak-pine forests, ponds, rivers, bays, fresh, brackish, and saltwater marshes attract a wide variety of wildlife. The Carmans River enters from the north, meanders through the refuge, and empties into Bellport Bay at the southern end of Wertheim. Yaphank Creek, Little Neck Run, and Big Fish Creek join the Carmans River within the refuge boundaries. The refuge originated as a donation from Cecile and Maurice Wertheim who maintained the property in a natural state for wildlife and waterfowl hunting. Since then, the area has been increased with additional land purchases and donations.



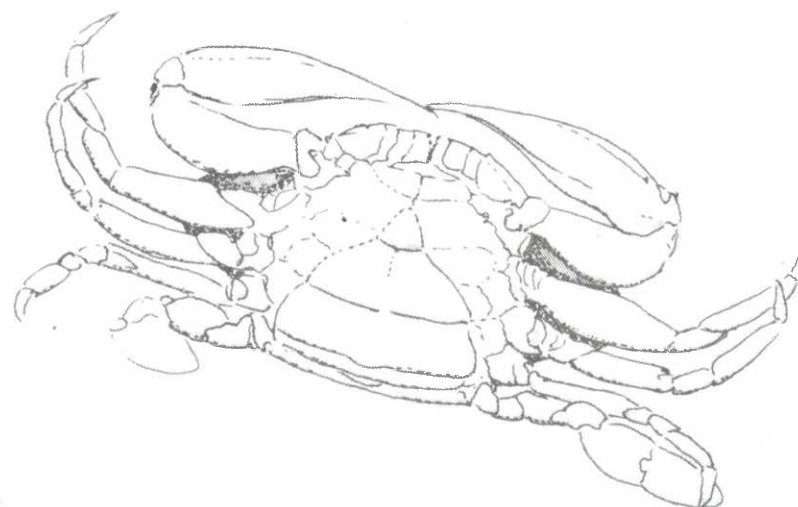
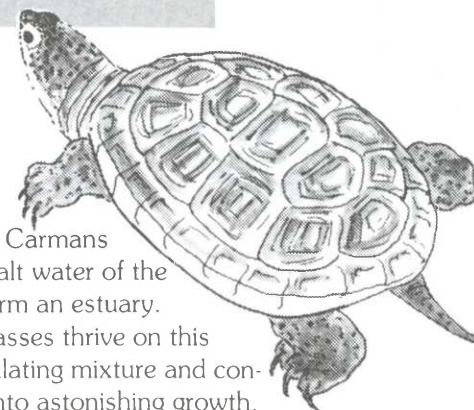
## WILDLIFE

Visitors can expect to see wildlife at any time, but viewing is best during early morning and evening hours while taking a quiet, observant walk or boat trip. In the forest areas, some of the commonly found animals are deer, fox, opossum, raccoon, squirrels, and song birds. Watch for herons stalking fish along the river, turtles sunning on logs, and the grass houses of muskrats. Overhead, hawks and ospreys can be seen soaring and searching their habitat for food. Wertheim is also important as a wintering area for concentrations of black duck and an occasional bald eagle. Remember that the animals are wild and shy. For the best chance to see them, bring binoculars and have patience.



## THE ESTUARY

Wertheim National Wildlife Refuge protects one of the last undeveloped estuaries on Long Island. The fresh water of the Carmans River mixes with the salt water of the Great South Bay to form an estuary. Meadows of marsh grasses thrive on this fertile, constantly circulating mixture and convert the sun's energy into astonishing growth. This environment supports a remarkable diversity and abundance of aquatic life. The complex web of life starts with detritus, the decomposing bits of dead plants. Bacteria grow on the detritus and, in turn, are food for protozoa and other microorganisms. Worms, insects, fiddler crabs, snails, shellfish, and young fish consume the detritus and the microorganisms. These smaller creatures are eaten by larger fish, mammals, and birds - all links in a food chain. Many species of fish important to commercial and sport fisheries are dependent on tidal estuaries and wetlands. Shore birds flourish on the tidal flats and salt marshes, and migratory waterfowl and other migratory species use them as vital feeding, resting, and wintering grounds.



## VISITOR ACTIVITIES

### Walking Trails

The Indian Landing trail is two miles long and starts from a parking area off the south end of Smith Road. The trail leads to Indian Landing and then returns. Pets on a leash (no longer than six feet) are permitted.

### Boating

Car top boats can be launched from the New York State Department of Environmental Conservation Cooperative Fishing Access Site at the north end of the refuge off Montauk Highway and at the end of Beaver Dam Road. Boats are permitted to land only at Indian Landing, the fishing access site, and Beaver Dam Road.

### Fishing and Crabbing

Fishing from the river bank is permitted between the Sunrise and Montauk Highways and the end of Beaver Dam Road. Fishing from a boat is permitted anywhere except on Big Fish Creek Pond. State regulations apply. The end of Beaver Dam Road is a popular spot for crabbing.

### Educational Opportunities

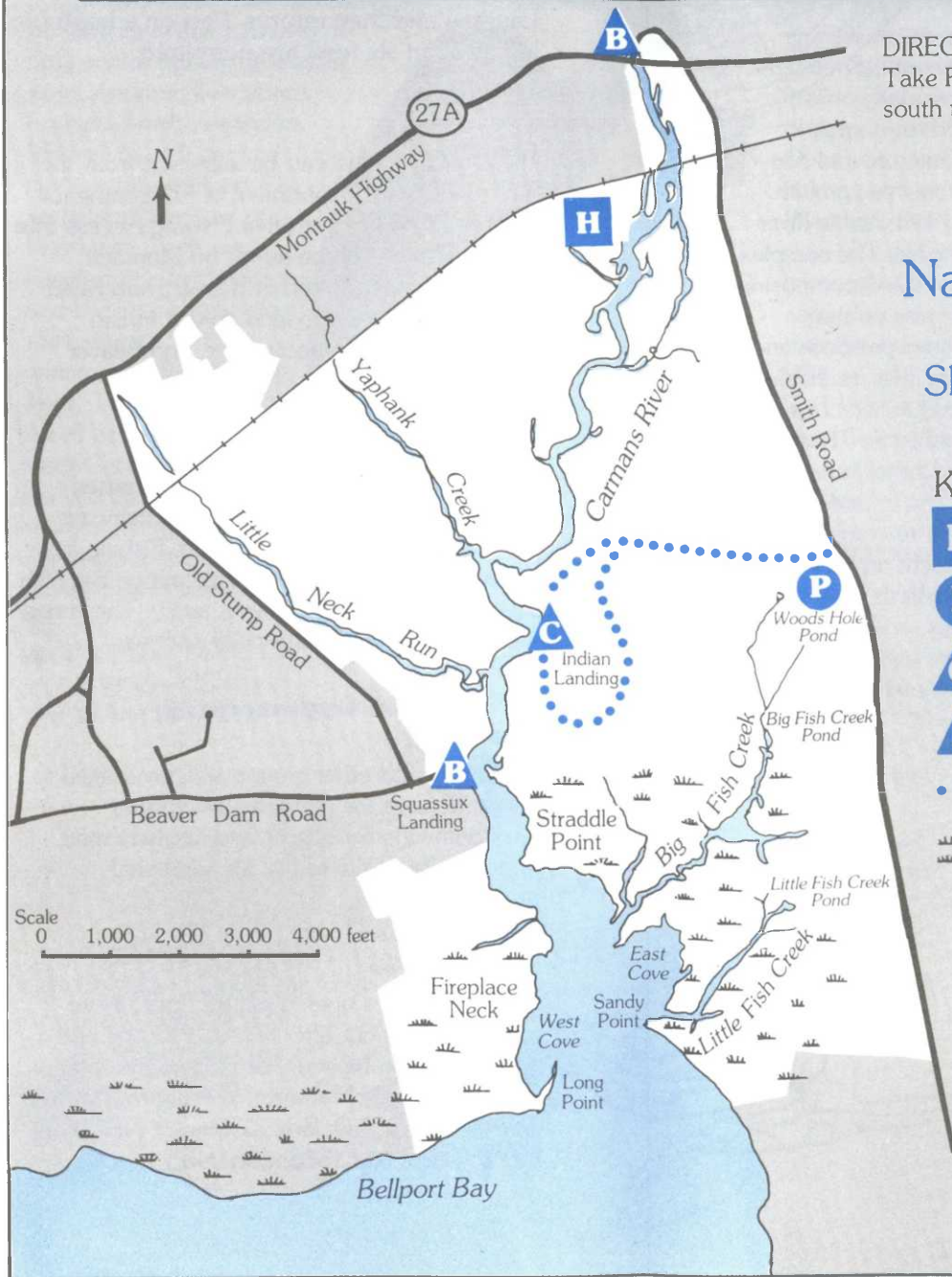
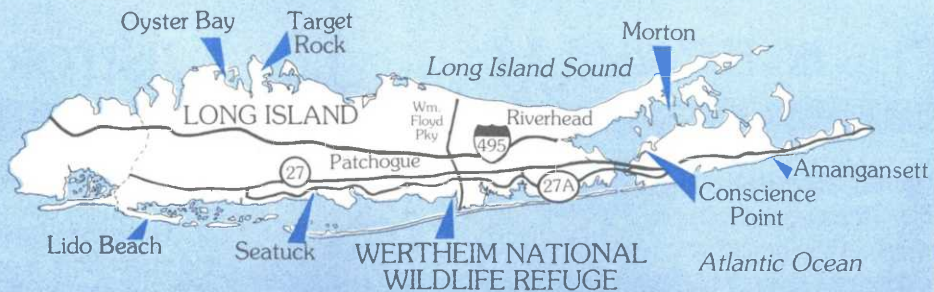
School and other groups are encouraged to use portions of the refuge as an outdoor classroom where students and teachers may study nature. Write or call for additional information.

### Hours

The refuge is open daily 1/2 hour before sunrise to 1/2 hour after sunset. Hunting and camping are prohibited. For Further Information Contact: Refuge Manager, Wertheim National Wildlife Refuge P.O. Box 21 Shirley, New York 11967 Telephone: (516) 286-0485



# National Wildlife Refuges Of Long Island



**DIRECTIONS:**  
Take Route 27A to Smith Road south to reach refuge headquarters.

## Wertheim National Wildlife Refuge Shirley, New York

### KEY

- H** = Refuge Headquarters
- P** = Parking
- C** = Canoe Landing
- B** = Car Top Boat Landing
- ..... = Walking Trails
- ~~~~~ = Marsh Areas



# MORTON

## National Wildlife Refuge



Sag Harbor, New York

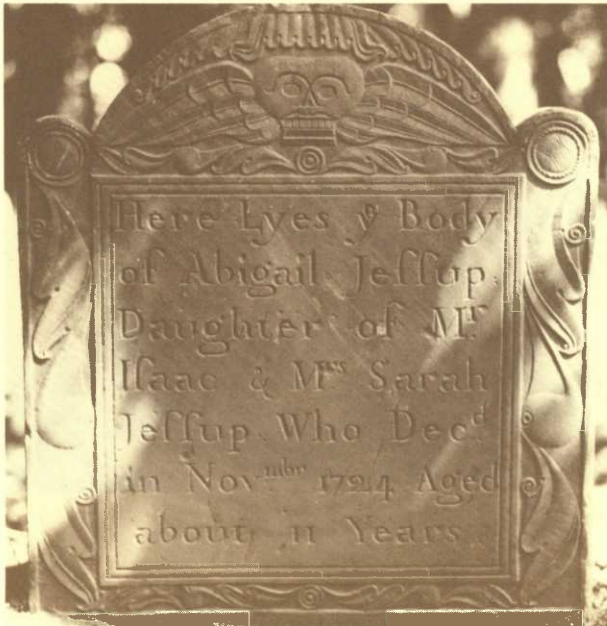


## History

Of the 13 principal Indian tribes on Long Island, New York, the Montauks and the Shinnecocks once occupied what is now the Morton National Wildlife Refuge.

In 1640 John Farrington, John Jessup, and other settlers from Lynn, Massachusetts founded the colony of South Hampton. Originally called Farrington Point, the peninsula took its present name of Jessups Neck when the land was deeded to John Jessup in 1679. The grave of Jessup's daughter, Abigail, who died in 1724, is on a wooded bluff of the refuge. The lettering and decoration are fine examples of gravestone inscription of that time.

In 1800 Isaac Osborn acquired the land and was responsible for extensive agricultural experimentation, introducing Bartlett pears, apples, and mulberry trees, the latter for silkworm raising. He also introduced the first shorthorn cattle and merino sheep to Long Island. Ownership of the area passed through two families over the years and it was donated to the U.S. Fish and Wildlife Service in 1954 by Elizabeth Morton.



## Description

This 187-acre refuge is one of over 430 National Wildlife Refuges throughout the United States that provide wintering, resting, and nesting areas for waterfowl and protect endangered and other wildlife. Morton Refuge is primarily a resting stop for waterfowl during their spring and fall migrations. Scaup, goldeneyes, and black ducks frequent the surrounding tidal water all winter.

The northern two-thirds of the refuge is a peninsula known as Jessups Neck. Sandy, gravelly, and rocky beaches fringe the peninsula, and the wooded bluffs of the neck overlook a small brackish pond. The remainder is woodland, brush, and open fields. After years of sporadic agriculture and occasional fires, the land is now reverting to a natural state.

## Wildlife

The primary objective of the refuge is to retain the natural character of the area for the protection of waterfowl and other wildlife. Over 200 species of waterfowl, birds of prey (including osprey, right), and shore and songbirds have been recorded by visitors and refuge personnel since 1956.

Deer can often be seen on the refuge, and cottontails and gray squirrels are common. Fox, weasel, raccoon, and opossum are present.

Bluefish and weakfish, as well as oysters, clams, and scallops, are found in the waters surrounding the refuge.

Piping plovers (cover) and least terns use the beach for nesting. A loss of habitat and human disturbance have caused their populations to decline. They are protected by law. During the nesting season, public access to the peninsula may be prohibited to protect the nest sites.







## Recreation

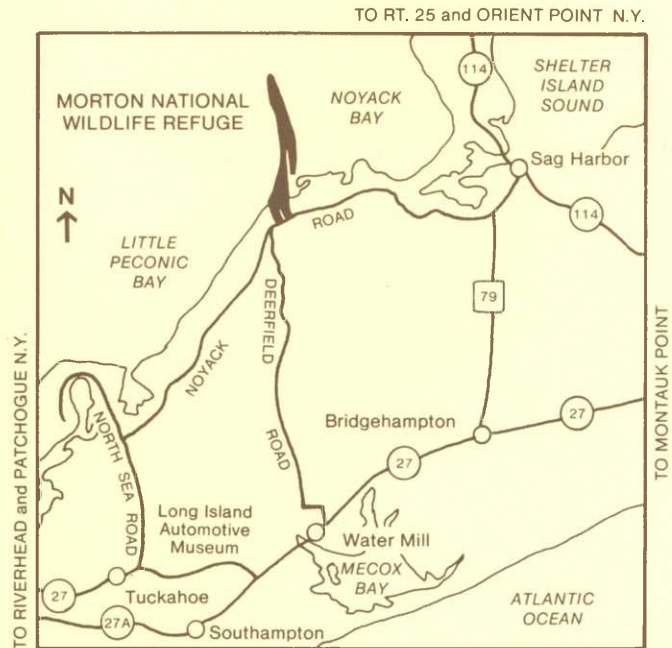
Hiking, nature study, bird-watching, painting, and photography are encouraged on the refuge. There is a nature trail and a visitor center at the headquarters.

## Hours

The refuge is open daily from ½ hour before sunrise to ½ hour after sunset. Hunting and camping are prohibited.

For further information contact:

Refuge Manager  
Wertheim National Wildlife Refuge  
P.O. Box 21  
Shirley, NY 11967  
Telephone: (516) 725-2270 or 286-0485



## U.S. FISH AND WILDLIFE SERVICE

Morton is one of more than 430 refuges in the National Wildlife Refuge System administered by the U.S. Fish and Wildlife Service. The National Wildlife Refuge System is a network of lands and waters managed specifically for the protection of wildlife and wildlife habitat and represents the most comprehensive wildlife resource management program in the world. Units of the system stretch across the United States from northern Alaska to the Florida Keys, and include small islands in the Caribbean and South Pacific. The character of the refuges is as diverse as the nation itself.

The Service also manages National Fish Hatcheries, and provides Federal leadership in habitat protection, fish and wildlife research, technical assistance and the conservation and protection of migratory birds, certain marine mammals and threatened and endangered species.

### Take Pride in Morton National Wildlife Refuge



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

RL-52566-1

May 1987



# TARGET



# ROCK

## NATIONAL WILDLIFE REFUGE LONG ISLAND, NEW YORK

### WILDLIFE

*The refuge has a variety of bird and mammal life. Of special interest is the concentration of warblers during the May migration. Resident mammals include cottontail rabbits, raccoons, fox, and gray squirrels. Bobwhite quail, ring-necked pheasant, and mourning doves also reside on the refuge. Mallards, black ducks, and Canada geese can be seen on the brackish pond near the beach. Silently approach the pond or the beach and you may observe a variety of shore and wading birds throughout the seasons. The Long Island area provides habitat to large concentrations of wintering waterfowl. Great rafts of ducks are often seen from the shore of Huntington Bay.*

### VISITORS

*Educational groups are encouraged to use the refuge for an outdoor classroom where students and teachers may readily study the interrelationships found in nature. Walking trails pass through hardwood forests, old formal gardens, and by a small pond and the shore of Huntington Bay. There is a self-guiding nature trail and photo blind. A point of interest is the large rock for which the refuge is named. The British reportedly used it for target practice during the Revolutionary War. At that time the rock was imbedded in the bluff, long since eroded away. The refuge is open from one-half hour before sunrise to one-half hour after sunset daily for hiking, photography, and nature study. Pets must be on a leash at all times.*

### NATIONAL WILDLIFE REFUGES

*Target Rock is one of over 400 National Wildlife Refuges. These refuges preserve selected physical resources, key fish and wildlife habitats, and overall environmental quality in representative ecosystems. National Wildlife Refuges are managed to preserve endangered plants and animals, to perpetuate the migratory bird resource for the benefit of the people, to preserve natural diversity and abundance of mammals and non-migratory birds, and to provide opportunities for environmental education and wildlife-oriented recreation.*



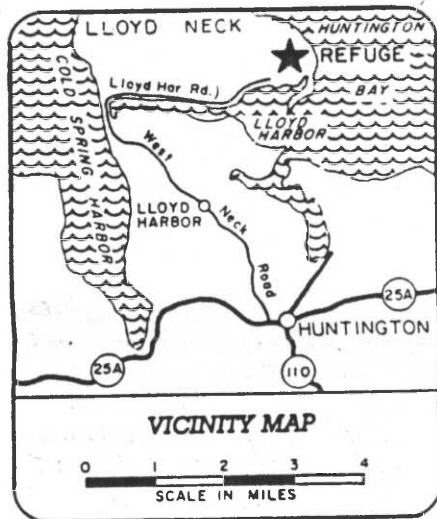
UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE



Take Pride in Target Rock National Wildlife Refuge



REFUGE  
YORK



### POINTS OF INTEREST

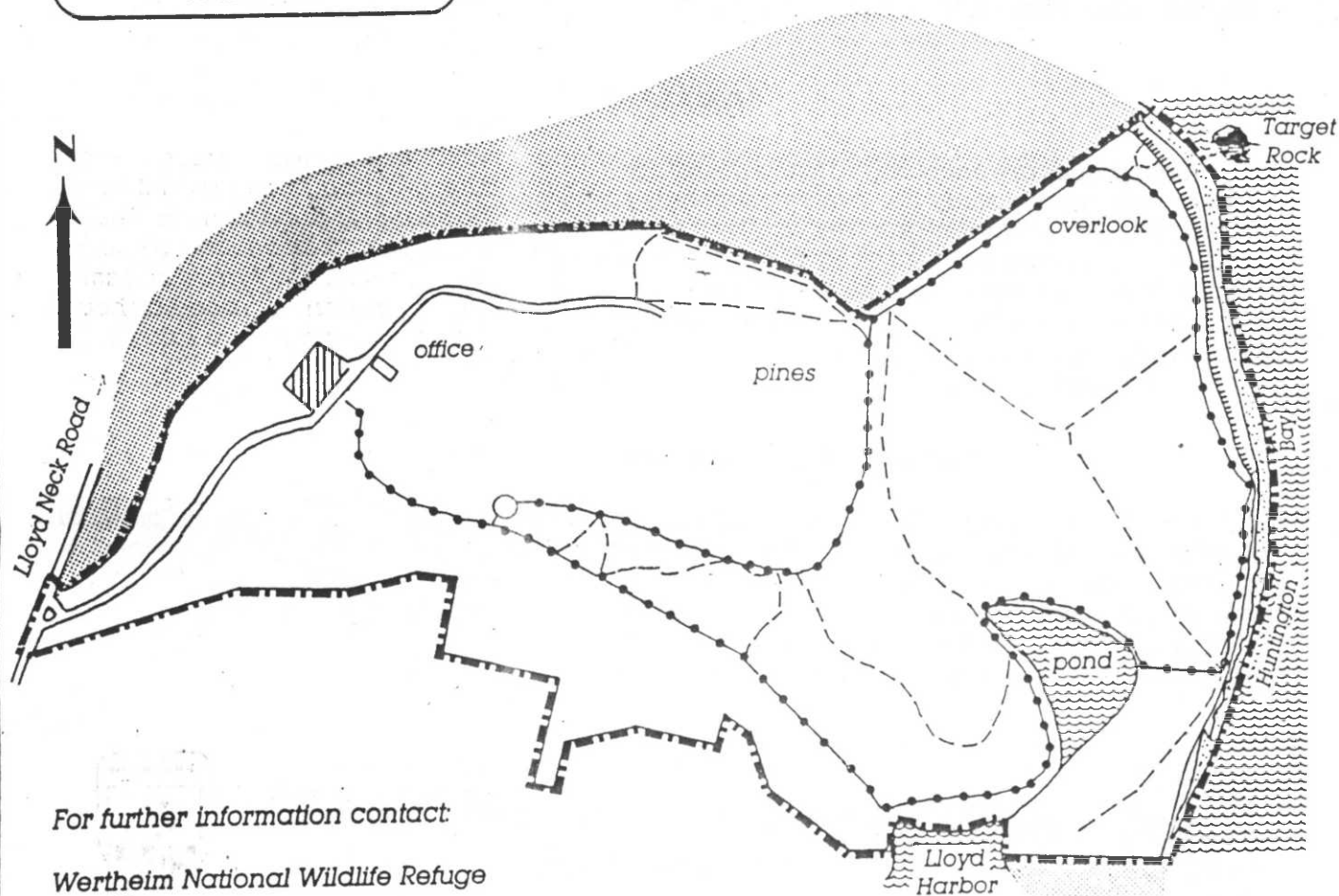
Target Rock  
Old formal gardens  
Huntington Bay overlook  
Beach and tidal life  
Nature trail

## ACTIVITIES

Environmental Education  
Wildlife Photography  
Hiking  
Nature study  
Bird watching

### LEGEND

-  Nature Trail  
 Other Trails  
 Private Land  
 Refuge Boundary  
 Beach  
 Edge of Bluff  
 Parking and Restrooms



For further information contact:

Wertheim National Wildlife Refuge  
Box 21  
Shirley, New York 11967  
Telephone: (516) 286-0485

1000 feet

March 1987



For further information, contact:

Refuge Manager  
Wertheim National Wildlife Refuge  
Box 21  
Shirley, New York 11967  
Telephone: (516) 286-0485

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE**

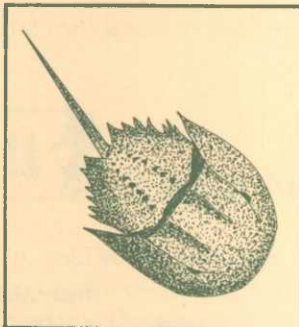


As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U. S. administration.



JANUARY 1983

# Nature Trail Guide



## TARGET ROCK NATIONAL WILDLIFE REFUGE

New York

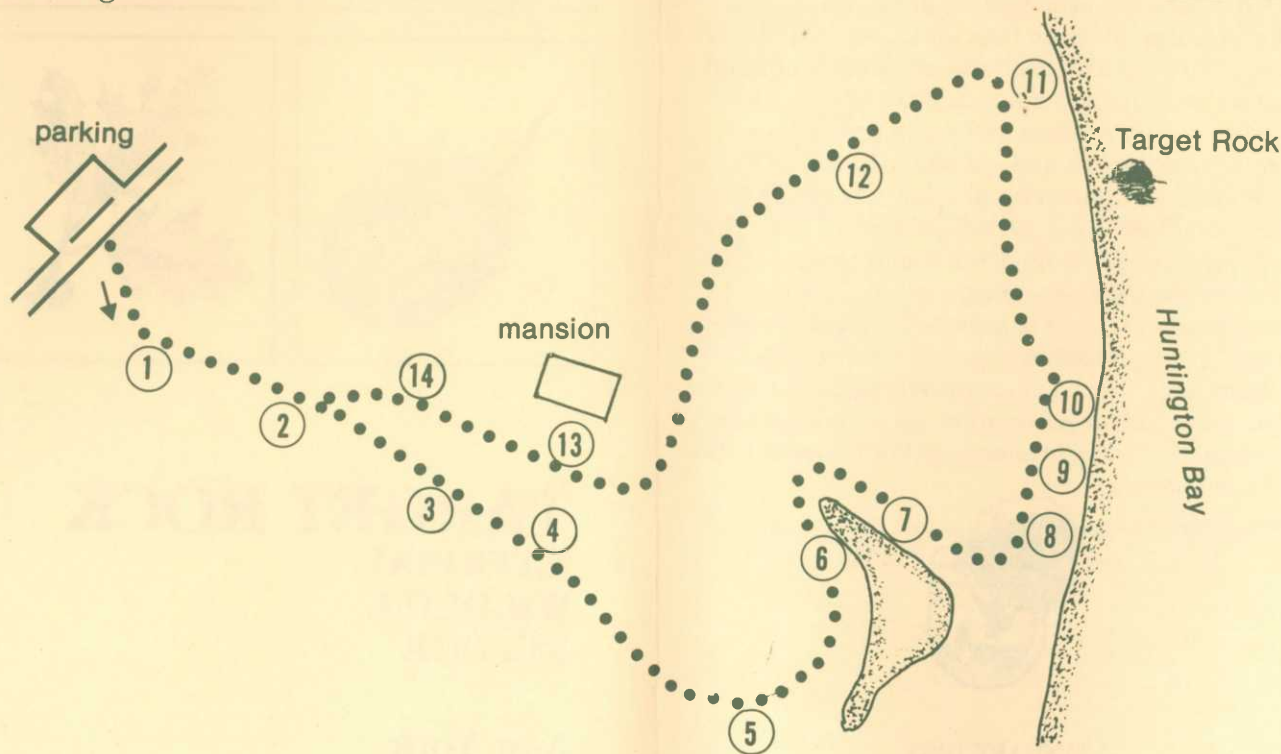


# Nature Trail Guide



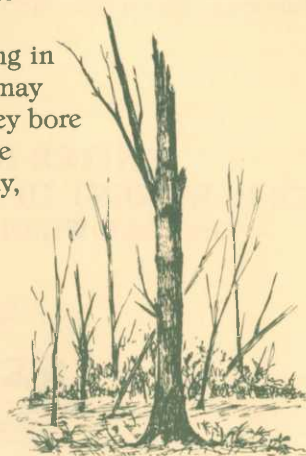
The trail is about one mile in length and will take about one hour to walk. Along the way the trail is marked with arrows.

← Numbered posts match the text in this guide.



## Dead Tree

Although this tree is dead, it is still useful to wildlife. Woodpeckers search for insects living in the rotting wood and may even nest in a hole they bore out. Eventually the tree will fall into final decay, enriching the soil from which new trees can grow.



DEAD TREE



## Moss

The moss on this tree shows which direction is north. When moss grows thicker on the north side of a tree it is because the north side is shaded from the sun, presenting a more suitable environment for moss.



## Climbers

The plant growing up the tree is ivy. By using a tree for support to reach for sunlight, the ivy does not need to grow its own sturdy trunk. Notice the method by which it clings to the bark of the tree.



ENGLISH IVY



## Tree Wound

Death or deformity of a tree often begins with a wound that penetrates the bark and exposes the wood beneath. Without protective bark, disease causing bacteria, fungi and viruses can infect its vital nutrient transport system.



TREE WOUND





## Salt Marsh

The salt marsh is one of the most productive areas in all nature. Marsh plants produce large amounts of organic materials which provide food for many insects, fish, shellfish, crabs, and birds. Most of the salt marsh on Long Island has been destroyed.

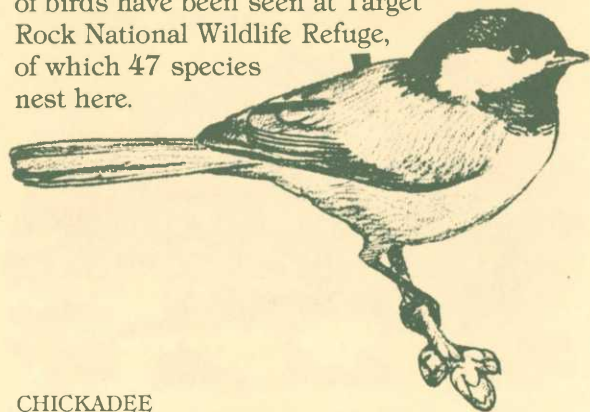


SALT MARSH



## Birds

Approach the blind silently. 191 different species of birds have been seen at Target Rock National Wildlife Refuge, of which 47 species nest here.



CHICKADEE



## Pond Life

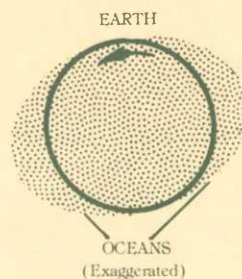
This small pond attracts many animals which feed on the plants, insects, worms, and fish found here. Sometimes salt water from the bay flows into the pond making it brackish.

The trail goes out to the beach.



## Tides

Two times every 24 hours, the water rises and falls about 7 feet. This is caused by the sun and the moon's gravity pulling at the water and earth. The stratification of rocks, pebbles, and sand and the ridges at the high water mark are caused by tides and wave action.



TIDAL ACTION



## Tidal Life

The area between the low and high tide marks is a harsh environment. Animals living here must be



able to withstand alternate soaking and drying, extremes of temperature, and wave action. Look for mussels and barnacles attached to the rocks and each other.

HORSESHOE CRAB



## Geology

The rough topography of this area was caused by glaciers which passed over this area thousands of years ago. Look for the loose rocks and boulders carried here and left as the ice melted.

The trail goes up the stairs.



## Target Rock

During the Revolutionary War, British ships reportedly used this rock for target practice. At that time the rock was embedded in a bluff which has long since eroded away.



TARGET ROCK



## Thicket

Dense thickets of greenbrier, grape, and bitter-sweet, such as this one, provide food and cover for wildlife. Rabbits and birds are protected here from weather and predators.



COTTONTAIL RABBIT



## Mansion

This 80-acre refuge was formerly the estate of Ferdinand Eberstadt, a New York banker. The estate was donated to the U.S. Department of the Interior in 1967, to be preserved in its natural state as a haven for wildlife and as a site for environmental education.

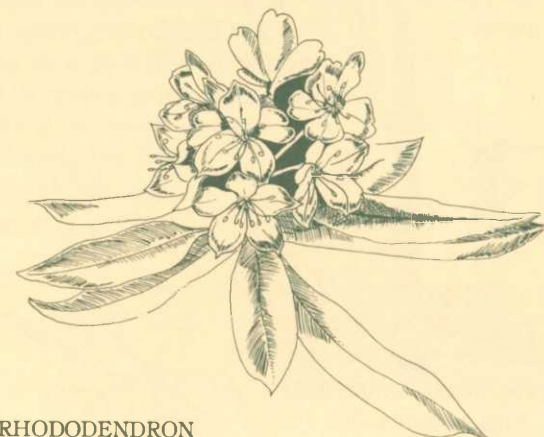


MANSION



## Old Formal Garden

These rhododendrons are part of the formal gardens of the Eberstadt estate. They bloom in May and attract birds on spring migration.



RHODODENDRON



## National Wildlife Refuges

Target Rock is one of over 400 National Wildlife Refuges. These refuges preserve selected physical resources, key fish and wildlife habitats, and overall environmental quality in representative ecosystems. National Wildlife Refuges are managed to preserve endangered plants and animals, to perpetuate the migratory bird resource for the benefit of people, to preserve natural diversity of mammals and non-migratory birds, and to provide opportunities for environmental education and wildlife-oriented recreation.